68

2104

This dissertation has been
microfilmed exactly as received 68-2104

PEABODY, Ralph Louis, 1928-
THE ADJUSTMENT OF PARTIALLY SEEING CHILDREN
AND ITS RELATIONSHIP TO VISUAL ACUITY.

Wayne State University, Ed.D., 1967
Education, theory and practice

University Microfilms, Inc., Ann Arbor, Michigan

THE ADJUSTMENT OF PARTIALLY SEEING CHILDREN AND ITS RELATIONSHIP TO VISUAL ACUITY

by

Ralph Louis Peabody

A DISSERTATION

Submitted to the Office for Graduate Studies,
Graduate Division of Wayne State University,
Detroit, Michigan
in partial fulfillment of the requirements
for the degree of

DOCTOR OF EDUCATION

1967

MAJOR: SPECIAL EDUCATION

APPROVED BY:

Gwen Retherford Jan. 19, 1967
Adviser Date

John J. Foster

James E. Keller

Edna S. Harrison

Harold F. Powell Ph.D

ACKNOWLEDGMENTS

It is with a deep sense of gratitude that acknowledgment is made to those many individuals who have generously given their wisdom and time toward the completion of this study. Space limitations prohibit recognition of each. However, appreciation is extended to all who have made such contributions.

Dr. V. Gwen Retherford, associate professor and chairman of the writer's dissertation committee, merits particular recognition for her valuable continuous assistance, support, and understanding. Suggestions, criticisms, and guidance from the other members of the committee proved most helpful; to these people I am most indebted. They include Dr. John J. Lee, distinguished professor and chairman of the Department of Special Education and Vocational Rehabilitation; Dr. Harold F. Powell, professor, Department of Educational Psychology; Mrs. Edna Harrison, professor of social work; and Dr. James Edwin Keller, professor, Department of Special Education and Vocational Rehabilitation. Dr. Keller was most generous in advising on statistical and editing aspects of the study.

The present investigation was undertaken while the author was a member of the faculty at the University of Pittsburgh. Not being in residence at Wayne State University posed certain hardships and problems. When situations occurred which could not be expediently handled by correspondence, Dr. Jack W. Birch, associate dean of the School of Education, University of Pittsburgh, unstintingly gave his guidance and assistance. The direct as well as indirect support of Dean Birch and colleagues at the University of Pittsburgh was most appreciated. Appreciation is also extended to Miss Sue Pobicki, secretary to the Program in Special Education and Rehabilitation at the University of Pittsburgh, for the major assistance she gave in the preparation of materials and the drafts of the report.

The study required the time, knowledge, and cooperation of over two hundred teachers of partially seeing children. Their contribution and interest are most sincerely acknowledged. Without their participation it would have been impossible to collect the data presented.

One constant personal resource was appreciated by the author throughout the graduate study program, including the completion of the dissertation. Whatever was required at the moment, ranging from wifely ministrations to professional knowledge, it was always provided in abundance. My heartfelt thanks are extended to my wife, Delores M. Peabody.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS ii

LIST OF TABLES vii

CHAPTER

I. THE PROBLEM 1

Introduction 1
Review of Literature 2

Visual Acuity 4
Adjustment 12
Summary 29

Definition of Terms 30
Assumptions Underlying Hypotheses 30
Hypotheses under Investigation 31
Rationale for Hypotheses 32
Additional Questions under Investigation 34

II. THE PROCEDURE 36

Design of the Study 36
Subjects in the Sample Population 37
Representativeness of the Partially Seeing Sample Population 39

Instrumentation 42
Data Collection 43
Data Treatment 44

CHAPTER Page

III. RESULTS AND CONCLUSIONS 45

Results 45

Characteristics of the Sample Population 45
Tests of the Hypotheses 81
Additional Questions Investigated 84

Conclusions 97

Hypotheses Investigated 97
Questions Investigated 98

IV. LIMITATIONS, RECAPITULATIONS, IMPLICATIONS, AND RECOMMENDATIONS 102

Limitations of the Study 102
Recapitulation and Implications 103
Recommendations 108

APPENDIXES 111

A. Personal Pupil Data Sheet 112

B. Instructions to Teachers 119

C. Teachers' Behavior Rating Scale 120

D. Development of Teachers' Behavior Rating Scale 137

BIBLIOGRAPHY 140

AUTOBIOGRAPHICAL STATEMENT 144

LIST OF TABLES

TABLE Page

1. Distribution of Subjects in the Sample Population by State of Residence, Grade Level, and Sex 46

2. Ages, in Months, of Subjects by Grade and Sex 48

3. Children's Residence 51

4. Cooperation between Home and School: Percentages and Frequencies by Grade and Sex 52

5. Distribution of Subjects by Type of Special Education Program 54

6. Number of Years in Special Education Programs 56

7. Classification Scheme for Degree of Visual Acuity in Better Eye after Correction 57

8. Frequencies and Percentages of Subjects According to Visual Acuity in Better Eye after Correction 59

9. Distribution of Subjects According to Both Near and Far Point Visual Acuity Measurements 62

10. Occurrences of Disabilities by Site and Type 64

TABLE Page

11. Occurrences of Disabilities by Structural Classification 66

12. Distribution of Subjects by Age at Onset of Vision Disability 69

13. Frequencies of Additional Handicaps 70

14. Teachers' Estimates of Achievement According to Grade Levels 72

15. Intelligence Quotients of Subjects by Grade and Sex 75

16. Frequencies of Various Intelligence Tests Administered 77

17. Teachers' Behavior Rating Scale Scores by Grade and Sex 79

18. Correlations of TBRS Items and Visual Acuity Ratings 85

CHAPTER I

THE PROBLEM

Introduction

Research findings concerning the adjustment and physical disabilities of individuals and groups have continuously been accumulated and have affected some changes in attitudes and educational processes. Studies of the adjustment of partially seeing children have primarily been concentrated on the adolescent age group or have compared partially seeing children to other groups of physically handicapped and normal children. The professional literature offers little on which to base any significant educational generalizations.

The general objective of this study was to acquire new knowledge while testing generalizations based on authorities' opinions and limited research concerning the adjustment of the partially seeing child. Two specific aspects were considered in the process of seeking the general objective. These were:

1. The overall adjustment of preadolescent partially seeing children was studied to determine if it is related in any significant way to the degree of remaining vision as measured by visual acuity.
2. Specific behavior characteristics which make up the overall adjustment measure were examined to determine which of them, if any, showed significant relationships to the degree of remaining vision as measured by visual acuity.

In addition, the subjects' adjustment scores were compared to a number of variables such as age, sex, and grade, to determine if relationships existed between adjustment and those variables.

Review of Literature

The present study concerned itself with two characteristics of partially seeing children which are of special interest to educators. The two characteristics were visual acuity and adjustment. The review of literature concentrated on these two aspects.

The body of literature relative to the special education of partially seeing children was found to be very limited. Several factors may well account for this paucity of information. The visually handicapped as a total group has been considered small in comparison to other groups of handicapped children. As a result of a recent national survey, Jones and Collins estimated one visually handicapped child per one thousand of the school enrollment.[1] Within the visually handicapped group, partially seeing children have not been identified for educational purposes in a consistent manner.[2]

It was most difficult to isolate research findings about partially seeing children from the studies encompassing the total group of visually handicapped. Studies were frequently combined under the heading of "Visually Handicapped," as evidenced in the research reviews prepared for the American Educational Research Association in 1959, 1963, and 1966.[3]

The variety of educational placement practices employed in different states and local communities made identification of any large and essentially similar group of partially seeing children for research purposes most difficult. The section delineates the literature related to the use of visual acuity information in the planning and conduct of education for the partially seeing.

---

[1] John Walker Jones and Anne P. Collins, Educational Programs for Visually Handicapped Children (Washington: U.S. Government Printing Office, 1966), p. 31.

[2] Refer to the various state special education regulations for further information.

[3] Samuel C. Ashcroft, "The Blind and the Partially Seeing," Review of Educational Research, XXIX (December, 1959), 519. Berthold Lowenfeld, "The Visually Handicapped," Review of Educational Research, XXXIII (February, 1963), 38. Samuel C. Ashcroft and Randall K. Harley, "The Visually Handicapped," Review of Educational Research, XXXVI (February, 1966), 76.

Visual Acuity

Use in definition of partially seeing

Acuteness of vision has been defined as the function of the eye in the process of perceiving the shape or form of objects. Acuteness of vision or visual acuity has commonly been expressed in a fraction form derived from the use of Snellen-type tests. The fraction does not represent the fraction of normal vision, but merely represents the ability to read at a given distance.[1]

The visual acuity measure, particularly far-point visual acuity, has played an important role in the identification and placement of partially seeing children. Far-point acuity is measured at optical infinity, or 20 feet, as opposed to near-point acuity which is currently measured at a distance of 14 inches. Although eligibility for educational services using the far-point visual acuity measure has been stated in a variety of ways from state to state, the following statement by Hathaway was fairly typical of eligibility requirements for educational services:

---

[1] James H. Allen (ed.), May's Manual of the Diseases of the Eye (Baltimore, Md.: The Williams and Wilkins Company, 1963), pp. 25-27. The visual acuity fraction has been used to indicate the item an individual saw on an eye test at a given distance. For example, if the figure were 20/30, it would mean the individual saw the test item at 20 feet which the normal eye could have seen at 30 feet.

> Such children, designated as the partially seeing, may be classified as follows:
>
> 1. Children having a visual acuity of 20/70 or less in the better eye after all necessary medical or surgical treatment has been given and compensating lenses provided when the need for them is indicated. Such children must, however, have a residue of sight that makes it possible to use this as the chief avenue of approach to the brain.
> 2. Children with a visual deviation from the normal who, in the opinion of the eye specialists, can benefit from the special educational facilities provided for the partially seeing.[1]

The second portion of Hathaway's statement (above) applies to eligibility for educational services for children who do not meet the requirement of low visual acuities in the first part of the statement.

Using only the far-point visual acuity criteria, the partially seeing have become conventionally separated from the blind and from the normally seeing as indicated in the example below:

	Far-Point Visual Acuity Limits
Normal seeing	20/20--20/70
Partially seeing	20/70--20/200
Blind	20/200

---

[1] Winifred Hathaway, Education and Health of the Partially Seeing Child (New York: Columbia University Press, 1954), p. 14.

In contrast to the 20/70 measure as a limit for the partially seeing, the limit for blindness using the most common definition for legal purposes has been 20/200. This resulted in many children with visual acuity of 20/200 or less being arbitrarily placed in programs for the blind even though they could function educationally as seeing individuals.[1]

Visual acuity has remained an important factor in determining which children are to be considered partially seeing for educational purposes. The United States Office of Education recently conducted a survey of 407 local and residential school programs for the visually handicapped to determine the evolution and identification of various organizational patterns of instruction, pupil classification and placement practices, and availability of special services. Of the 376 programs reported to be serving partially seeing children, 74 percent of the programs stated that an important consideration was "visual acuity of 20/70 or less in the better eye with glasses."[2] Also, 85 percent indicated as important the item, "Child has limited vision and is unable to make satisfactory progress in regular school programs."[1] This indicated that visual acuity was not the only criterion for consideration.

---

[1] Those individuals who are able to use ink print as a major means of written communication rather than braille.

[2] Jones and Collins, p. 20.

Far-point visual acuity

Far-point visual acuity measures are important in determining which children will be classified as partially seeing. However, a substantial number of children who do not meet the traditional criterion of visual acuity have been included in special education programs under the second part of Hathaway's definition. Visual acuity measures have usually been available for those children, too, and they have ordinarily been included in prior research studies. Thus, it has been possible to determine the visual acuity ranges of partially seeing children in special education programs.

Pintner's study of "Intelligence Testing of Partially Seeing Children" included 518 partially seeing children. He reported 42.5 percent of the subjects had better than 20/70 visual acuity and 2.5 percent had less than 20/200 visual acuity.[2] Kerby, reporting on a survey made by the National Society for the Prevention of Blindness to determine the nature and degree of vision of partially seeing children, presented a combined tabulation on 7,310 partially seeing children from 600 classes. In this study 40 percent had more than 20/70 visual acuity and 7.8 percent had less than 20/200 visual acuity.[1] Bateman found 38 percent of the 131 partially seeing children studied had better than 20/70 visual acuity and 23.5 percent had less than 20/200 visual acuity.[2] Kirk reported for the 1948-1955 period that 41.3 percent had visual acuity of better than 20/70 and 6.6 percent less than 20/200 visual acuity. During the 1956-1963 period the Kirk study revealed 29.8 percent in the better than 20/70 group and 10.5 percent with less than 20/200. Of the total 991 subjects over the entire period, 1948-1963, 36.6 percent were in the better than 20/70 visual acuity group and 7.7 percent were in the group with less than 20/200 visual acuity.[3] The four studies cited above are examples which demonstrated that the 20/70 to 20/200 visual acuity measurement, while important, included only about one-half the children in classes for the partially seeing.

---

[1] Ibid.

[2] Rudolf Pintner, "Intelligence Testing of Partially Seeing Children," Journal of Educational Psychology, XXXIII (April, 1942), 268.

---

[1] C. Edith Kerby, "A Report on Visual Handicaps of Partially Seeing Children," Exceptional Children, XVIII (February, 1952), 139.

[2] Barbara D. Bateman, Reading and Psycholinguistic Processes of Partially Seeing Children ("CEC Research Monographs," Series A, No. 5; Washington: The Council for Exceptional Children, NEA, 1963), p. 10.

[3] Edith Cohoe Kirk, "Changes and Trends in the Characteristics of Children in Classes for the Visually Handicapped, Detroit Public Schools, 1948-1963" (unpublished Ed.D. dissertation, Department of Special Education, Wayne State University, 1965), pp. 184-85.

During the approximately twenty years reported in these studies, a decrease was noted in the percentage of children in the better than 20/70 visual acuity group, and an increase was shown in the less than 20/200 visual acuity group. These changes indicated that currently children with poorer vision, as indicated by visual acuity measurements, are presently receiving special education services when compared with the children enrolled as recently as twenty years ago. This variation has been attributed to changing placement practices, the increase in itinerant programs, and the change in philosophy regarding sight conservation. It was during this period that sight "utilization" rather than protective "conservation" became an accepted educational goal for partially seeing children.[1]

---

[1] John Walker Jones, The Visually Handicapped Child at Home and School (Washington: U.S. Government Printing Office, 1963), p. 10.

Near-point visual acuity

Knowledge of near-point visual acuity for educational planning has been considered desirable,[1] as it has been included in medical report forms designed for educational purposes.[2] These forms were prepared in consultation with leading special educators in the field. Also, the probable significance of near-point acuity has been emphasized in teacher education programs.

Visual acuity as an indication of educational handicap

On a rational basis there has been good reason for special educators to be interested in near-point acuity. Most school reading tasks call for the use of the eyes at near-point distance rather than far-point distance. Therefore, it has been somewhat surprising to find very little attention paid to it in prior research. Only one investigation was found which used near-point acuity as an experimental or control variable, or which attempted to analyze relationships between near-point and far-point data.[3]

---

[1] Ibid., p. 17.

[2] Ibid., p. 53. National Society for the Prevention of Blindness, Eye Report for Children with Visual Problems, Blind and Partially Seeing (New York: National Society for the Prevention of Blindness, 1965).

[3] Natalie Barraga, Increased Visual Behavior in Low Vision Children (New York: American Foundation for the Blind, 1964), pp. 3-4.

Visual acuity has been widely accepted as a measure of visual impairment, but it has not been certain that it has been a measure of educational handicap. Its possible relationships to visual functioning and psychological behavior are not known. Its main use to date has been considered to be one of the measures for the identification of visually handicapped children and as such it has been widely used in special education.

Since much attention has been given to the use of visual acuity as a criterion for selection of pupils for admission to special education programs for the partially seeing, it was somewhat surprising to find so few studies which attempted to relate differences in visual acuity to educationally relevant considerations such as behavioral or educational adjustment.[1] On the face of the matter it would seem reasonable that the wide range of visual acuities found in partially seeing pupils might be related in important ways to pupil behavior and adjustment both at home and at school. The extent to which the latter has been studied is reviewed in the next section.

---

[1] Ashcroft and Harley, Review of Educational Research, XXXVI, 75-79.

Adjustment

The review of literature relative to adjustment of partially seeing children generally could be found in two distinct categories. The various studies fit these two groups as follows: (1) opinions of authorities, and (2) empirical studies.

Opinions of authorities

The Advisory Committee on Education of Partially Seeing Children of the National Society for the Prevention of Blindness considered that visual disabilities potentially affected adjustment. They felt that the emotional and social implications of eye defects were numerous and varied, and cautioned that the deformed eye or reduced vision could have specific meaning to one individual and not another. They stated that "the reactions of the child's family, . . . school and community attitudes, and his own feelings about his handicap are major factors in determining the child's total adjustment."[1] In 1956 Gluckman, while discussing the adjustment problems of a partially seeing child, stated:

---

[1] National Society for the Prevention of Blindness, Advisory Committee on Education of Partially Seeing Children, "Helping the Partially Seeing Child in the Regular Classroom," Sight-Saving Review, XXIII (Summer, 1953), 99.

> Children or adults with sensory handicaps are different psychologically. . . . It is through association with our environment and our differentiation of ourselves from it that we establish our identity as individuals.[1]

Schlaegel reported that ophthalmologists found emotional conflict in patients. Of seven ophthalmologists reporting their opinions on the prevalence of emotional problems in patients, Schlaegel found a range from 40 to 100 percent of patients who had emotional problems, and two ophthalmologists stated they felt emotional problems were more common in connection with the eye than any other organ.[2] It was not indicated whether these opinions were based on partially seeing patients or blind patients.

Young, without reference to specific studies or sources, stated, "To those who have given considerable attention to the study of visual difficulties there seems to be ample evidence that impairments in the functioning of the visual mechanism may not only affect total personality development, but also seriously impede the efforts of individuals to adjust to scholastic, social and vocational situations."[1] Young further considered that the type of school placement affected the development of the emotionally healthy individual. In addition, she expressed the opinion that the type of visual impairmant was related to adjustment. Such conclusions were made as ". . . myopes may be frequently introverted, selfish and self centered, while . . . hyperopes may become lazy, inattentive, mischievous and extroverted."[2]

---

[1] National Society for the Prevention of Blindness, "Social and Emotional Adjustment of School Children with Eye Handicaps, a Multi-discipline Approach," Sight-Saving Review, XXVI (Fall, 1956), 160.

[2] T. F. Schlaegel, Jr., Psychosomatic Ophthalmology (Baltimore, Md.: Williams and Wilkins Co., 1957), p. 3.

Gibbons stressed good mental health practices for partially seeing children. She felt that development of a self-concept which gave a feeling of adequacy to the individual was especially important to such children. The importance of the special teacher was emphasized in helping the child to develop in an emotionally healthy manner.[3]

Empirical studies

There have been a number of empirical investigations about the psychosocial effects of sensory deprivation. Examples are those of Bruner,[1] Hebb,[2] and Ruff, Levy, and Thaler.[3] For the purpose of this review they are not relevant since they dealt with the consequences of temporarily imposed sensory deprivation upon otherwise normal conditions. While valuable for other purposes, such studies do not simulate the situation of the child with a more or less permanent sensory disability. The studies which are reviewed below, on the other hand, deal directly with such children and their adjustment.

---

[1] Marjorie A. C. Young, "The Partially Seeing--Psychological Aspects," Psychological Aspects of Physical Disability ("Rehabilitation Service Series," No. 210; Washington: U.S. Government Printing Office, 1952), p. 162.

[2] Ibid., pp. 171-72.

[3] Helen Gibbons, "Mental Health for Children with Vision Disability," Sight-Saving Review, XXX (Winter, 1960), 220.

Pintner and Forlano conducted a study to determine whether ". . . group tests of the inventory type reveal any differences between children in sight conservation classes and those in regular classes? Does a minor physical handicap such as partial loss of vision cause any change in personality make-up, so that it can be measured by a personality inventory?"[1] The first instrument used was the Aspects of Personality Test, to measure (1) ascendence-submission, (2) extroversion-introversion, and (3) emotional stability. The second instrument was the Pupil Portraits Test, to measure adjustment to school and home situations.[2] The subjects on the first test consisted of 231 boys and 211 girls with the majority of the children in grades five and six. The second test was administered to 217 boys and 215 girls. The published report was not clear as to how much overlap there was in the two populations.

---

[1] Jerome S. Bruner, "The Cognitive Consequences of Early Sensory Deprivation," Sensory Deprivation, ed. Philip Solomon et al. (Cambridge, Mass.: Harvard University Press, 1961), p. 207.

[2] D. O. Hebb, "Cognitive and Psychological Effects of Perceptual Isolation," Sensory Deprivation, ed. Philip Solomon et al. (Cambridge, Mass.: Harvard University Press, 1961), pp. 6-8.

[3] George E. Ruff, Edwin Z. Levy, and Victor H. Thaler, "Factors Influencing Reactions to Reduced Sensory Input," Sensory Deprivation, ed. Philip Solomon et al. (Cambridge, Mass.: Harvard University Press, 1961), p. 72.

The results of the first test, by inspection of the medians and quartiles, showed that the boys more closely approximated the norms than did the girls. The girls deviated most in the extroversion-introversion measure. The partially seeing girls tended to be more introverted than normal girls, as the medians were all below the fiftieth percentile, and all of the quartiles except one were below normal expectancy. The authors found no marked deviations from normal children in the other aspects of personality as measured by the group inventories.

---

[1] Rudolf Pintner and G. Forlano, "Personality Tests of Partially Sighted Children," Journal of Applied Psychology, XXVII (June, 1943), 283.

[2] Ibid.

Practically no difference between the percentile ratings for boys and girls was found on the Pupil Portraits Test. Most of the medians were in the forties and fifties, which indicated no great divergence from the norms. When comparing the partially seeing with the hard of hearing to answer one of the questions, Pintner found that slight handicaps do not lead to marked differences in personality traits as measured by personality inventories. On the second test the partially seeing scored slightly above the normal and the hard of hearing slightly below. Pintner concluded that major emphasis must be placed on similarities of, rather than differences between, children with slight visual or auditory defects and normal children. Personality traits, such as were measured by the tests used, varied from child to child in the handicapped groups in the same manner as they would among a group of normal children.[1] The authors of this study did not describe in any reference their partially seeing sample other than to indicate they were in sight conservation classes. Therefore, it is not possible to draw any conclusive generalizations about adjustment of partially seeing children from this study.

---

[1] *Ibid.*, p. 287.

Morgan investigated the emotional adjustment of pupils in a residential school for blind children. The problem was divided into three questions:

1) How do the boys and girls in a residential school for the blind compare, in terms of emotional adjustment, with each other and with samplings reported upon in the literature?
2) To what degree is a measure of emotional adjustment related to such factors as degree of vision, chronological age, number of years in the residential school for the blind, and intelligence?
3) What association exists between the emotional adjustment score of the pupil and his behavior record in the school and in the dormitory?[1]

The sample population consisted of sixty-two boys and sixty-six girls, all eighth-grade students, with a mean age of 15.8 years (three grades lower than may be expected for their age), and average in intelligence. The subjects were classified as blind or partially sighted. The partially sighted classification included some braille readers along with the braille and print readers, and print readers who might more typically be expected in such a group. "The Personal Index"[2] was administered orally to the entire sample.

That section of Morgan's study regarding the relationship of adjustment to subgroups according to degree of vision could be particularly pertinent for consideration here. The investigators found that, on the average, the totally blind were better adjusted than the partially seeing. The partially seeing pupils who were classified as both print and braille readers were better adjusted than were the balance of the partially seeing group classified as print readers only.

---

[1] David H. Morgan, "Emotional Adjustment of Visually Handicapped Adolescents," Journal of Educational Psychology, XXV (February, 1944), 65, 66.

[2] Ibid., p. 73.

The number of subjects in each group was small, ranging from four to twenty-nine. It was pointed out that in many instances the partially seeing subjects were originally placed in the residential school because they were problem children. Therefore, it did not appear reasonable to draw conclusions about partially seeing children in general regarding adjustment and its relationship to visual acuity from Morgan's study.

Mull, in 1948, attempted to determine whether myopes tend toward introversion.[1] A sample of fifty-three myopic (20/40 to 20/800) college girls was compared to a visually normal control group of forty-seven similar college girls. The Bernreuter Personality Inventory[2] was administered to determine the degree of introversion. Mull found 74 percent of the myopes were extroverted and 25 percent introverted, with a range of scores from +69 to -89. (The higher the positive score, the greater the tendency toward introversion.) Of the control group, 83 percent were found to be extroverted and 17 percent introverted, with scores ranging from +58 to -103.

---

[1] Helen K. Mull, "Myopia and Introversion," American Journal of Psychology, LXI (October, 1948), 575.

[2] Robert Bernreuter, The Personality Inventory (Stanford, Calif.: Stanford University Press, 1935).

The correlation of the degree of myopia with the amount of introversion was found to be negligible (r = -.09). On the basis of group comparisons, myopes showed a slight but consistent tendency toward greater introversion than visually normal students. The investigators felt that the results of the study suggested that myopia was a relatively unimportant factor for introversion.[1] Though the evidence from Mull's study of a relationship between one factor of adjustment and one eye condition is weak, it suggested a need for further and more definitive research. A firm conclusion about the partially seeing, based upon forty-seven college subjects with only the visual acuity range indicated, was not feasible and it was of questionable generalizability to special education practices for children.

---

[1] Mull, American Journal of Psychology, LXI, 576.

To appraise informally the personal-social adjustment of visually limited pupils was one of the purposes in a study conducted by Livingston, Justman, and Gilbert.[1] Their other purposes were to ascertain the general level of intelligence of sixth-grade visually handicapped pupils enrolled in sight conservation classes, to relate individual test results to achievement test findings, and to provide guidance for the individual children examined. The investigators examined 116 (87.6 percent) of the sixth-grade partially seeing children enrolled on the register of the New York City schools. Psychological tests used were the revised Stanford-Binet Intelligence Scale on eighty-eight subjects, the Wechsler Intelligence Scale for Children with twenty-four subjects, and both tests for four children. Human Figure Drawings were obtained from all subjects, and the Bender-Visual Motor Gestalt Test[2] was used selectively with subjects suspected of having organic brain problems. Sight conservation teachers supplied records, and each teacher was interviewed by the psychologist to obtain data relative to the child's behavior, academic achievement, and home background.

---

[1] Jerome S. Livingston, Joseph Justman, and Harry B. Gilbert, Studies of Children with Physical Handicaps: III. Sixth Grade Children with Visual Handicaps Enrolled in Sight Conservation Classes (New York: Bureaus of Child Guidance and Educational Research, Board of Education of the City of New York, June, 1955), p. 5.

[2] Ibid., p. 6.

According to this study sixth-grade visually handicapped children varied six years in mental age and sixty points in intelligence quotient. Considerably more (23.3 percent) of the visually handicapped group proved to be borderline or mentally retarded than normally (8.2 percent) found in the school population. Moderate agreement was found between the Stanford-Binet Scale and the Pintner-Cunningham Primary Test.[1] The mean intelligence quotient of the group was 3.6 points higher on the Stanford-Binet Scale. Agreement between teacher estimates and test estimates of achievement in relation to capacity was noted in about 75 percent of the cases.

Most important in relation to the study to be reported here, almost one-half (43.1 percent) of the 116 subjects examined were considered to have emotional problems serious enough to be hampering their intellectual functioning and daily living. The investigators further felt that visually handicapped children in general appeared to be insecure, overconforming, and to have had strong feelings of inadequacy. The latter conclusions relative to adjustment were based on qualitative findings. The subjects were not described relative to visual condition, nor were the criteria for admission to the program specified. Therefore, it was impossible, in this study, to determine any but the most general relationship between adjustment and factors relating to visual characteristics. The personality trends reported were based on clinical judgments with the exception of one trait, inadequacy. This one trait emerged from the Pupil's Figure Drawings.

---

[1] Ibid., p. 20.

Partially seeing children were included in a study of adjustment by Cowen et al. The purpose was to determine factors relating to adjustment. Specifically these investigators had five guiding questions:

1) How do visually disabled adolescents compare with demographically similar sighted adolescents with respect to personality makeup and adjustment?
2) How do the parents of these disabled and sighted Ss compare in their attitudes toward child rearing, blindness, minorities, and authoritarianism?
3) What is the relationship between measures of parental attitude and those of adolescent adjustment in visually disabled and sighted groups, and are there differences in such relationships between groups?
4) How do parents of visually disabled and sighted adolescents compare in their ability to understand their children (i.e., their ability to predict their children's verbal responses to several types of test stimuli)?

5) Within a given subject group how do these measures of understanding relate to indices of adjustment and are there differences in these relationships between subject groups?[1]

In addition, data were gathered on such other issues as differences between groups of varying degrees of visual disability and differences between children living at home attending regular education facilities and those living in residential schools. The instruments for measures of adjustment provided a total of seven different adjustment indices. The three instruments used were the Self-Ideal Sort, the Teachers' Behavior Rating Scale, and the Situations Projective Test. Measures of parental attitudes were taken on the F-Scale, the Anti-Minority Scale, Attitudes toward Blindness Scale, and Situations Projective Test A; attitudes toward child-rearing and sociopsychological attitudes were taken on the Master Scale. Instruments for measuring parental understanding were the Predicted Self Concept, Predicted Situations Projective Test B, and the "Dummy" Sort.[2]

The subjects included 167 adolescents in seventh through twelfth grades, between the ages of thirteen and eighteen. All 167 mothers of the children were interviewed independently. Experimental group one consisted of seventy-one visually handicapped subjects in a public day school facility. This group consisted of three subgroups defined by degree of visual acuity. At the same time a control group was drawn of normally sighted subjects. A second experimental group of fifty-six visually handicapped subjects was selected from residential schools. This group consisted of two subgroups according to degree of visual acuity. The groups according to visual acuity were distinguished as follows:

---

[1] Emory L. Cowen et al., Adjustment to Visual Disability in Adolescence (New York: American Foundation for the Blind, 1961), p. 3.

[2] Ibid., pp. 52-71.

1. Totally blind--Functional vision is entirely lacking. Medical records specify visual acuities to be "total blindness," "nil," or "light perception only" (N=12).
2. Legally blind--Visual acuities in this group ranged from no better than 20/200 to no worse than 20/400 in the better eye after correction (N=28).
3. Partially sighted--Visual acuities ranged from no better than 20/70 to 20/100 in the better eye after correction (N=31).[1]

The thirty-six variables considered in the study were as follows:

Number	Variable
1	Self-concept adjustment score (child)
2	Self-concept discrepancy score (child)
3	SPT$_b$--Perceived pity (child)
4	SPT$_b$--Perceived overprotection (child)
5	SPT$_b$--Perceived rejection (child)
6	SPT$_b$--Perceived acceptance (child)
7	Self-concept adjustment score (mother)
8	Self-concept adjustment score for dummy sort (mother)
9	SPT$_b$--Predicted pity (mother)

---

[1] Ibid., pp. 76-77.

Number	Variable
10	SPT$_b$--Predicted overprotection (mother)
11	SPT$_b$--Predicted rejection (mother)
12	SPT$_b$--Predicted acceptance (mother)
13	Teachers' behavior ratings
14	Index of socioeconomic status
15	IQ of child
16	Self-concept (mother-child discrepancy)
17	SPT$_b$--Pity (mother prediction minus child perceived)
18	SPT$_b$--Overprotection (mother prediction minus child perceived)
19	SPT$_b$--Rejection (mother prediction minus child perceived)
20	SPT$_b$--Acceptance (mother prediction minus child perceived)
21	"Dummy" sort (mother) minus self-concept (child)
22	"Dummy" sort (mother) minus ideal self (child)
23	"Dummy" sort (mother) minus child's self-concept (mother's prediction)
24	Child self-concept (mother's prediction) minus ideal self (child)
25	Master Scale--Dominance (mother)
26	Master Scale--Overprotection (mother)
27	Master Scale--Rejection (mother)
28	Master Scale--Acceptance (mother)
29	Master Scale--Anti-Minority (mother)
30	Master Scale--F (mother)
31	Master Scale--Attitudes to Blindness (mother)
32	SPT$_a$--Dominance (mother)
33	SPT$_a$--Overprotection (mother)
34	SPT$_a$--Rejection (mother)
35	SPT$_a$--Acceptance (mother)
36	Age of child in months[1]

The design of this study grouped the partially seeing and blind together. Therefore, with three exceptions it was impossible to isolate from the findings characteristics specifically related to partially seeing children.

---

[1] *Ibid.*, p. 231.

In one instance the two experimental groups were subdivided by degree of disability (visual acuity) and designated as totally blind, legally blind, and partially seeing. A series of *t* tests were performed testing the significance of differences for subgroup means on the seven basic adjustment indices (items 1-6 and 13 on list of variables). No significant differences were found. When the control group was combined with experimental group one (day school students) to establish a visual acuity continuum from blindness to normal sight, a low but significant correlation (r = .19; p = .05) was found between degree of visual impairment and goodness of adjustment as measured by the self-ideal sort. This indicated that the greater the disability, the better the adjustment of the subjects.

The second instance where the investigators used the subgroups of the day school children by degree of visual acuity to make comparisons with the control group was in an item analysis for three measures: child's self-concept scores, child's self-ideal discrepancy, and mother's predicted self-concept. They found only six significant differences out of sixty comparisons; fifty-four failed to exceed chance expectations. They concluded that it was not possible to identify a cluster of relevant adjustment items which differentiated the responses of visually disabled and sighted subjects.

A "Dummy" Sort was administered to the mothers of the subjects and the scores were then compared between visual acuity subgroups. Each mother was asked to rank a group of statements as she believed the "average teenager" would rank them. The "dummy" adjustment score was then compared with an adjustment score derived from the mother's predictions on the self-concept instrument for her own child. Within the experimental group of day school students substantial correlations were found for the parents of the totally and legally blind subjects between adjustment scores based on the mother's prediction for her own child and the average child (totally blind subgroup, $r = .65$; legally blind, $r = .57$; both significant at $p = .01$ or beyond). For the partially sighted subgroup the correlation disappeared ($r = .00$). The investigators concluded: "Mothers of partially sighted youngsters appear either to be more capable of differentiating their child from the average child, or else they feel that their child differs more from other children than do the mothers of other disability sub-groups."[1]

---

[1] *Ibid.*, p. 104.

It proved difficult to isolate characteristics relative to the partially seeing in this study. The three visual acuity groups used by the investigators were not consistent with the customary classifications. The legally blind group appeared to have included some children usually considered as partially seeing. At the other end of the scale most groups of partially seeing children included some with better than 20/70 visual acuity as has been pointed out in all the previously reported studies. The Cowen _et al_. study was useful chiefly in that it lent strength to the idea that partially seeing children might have been unlike either blind children or visually normal children in their adjustment as perceived by their mothers.

Summary

Authoritative opinion held that there was a relationship between visual disability and adjustment. None of the empirical studies reported either verified or rejected the clinical impressions or opinions of the authorities. Evidence indicated the possibility that a relationship between visual acuity and adjustment existed, but conclusive findings upon which generalizations could be based were not found.

Definition of Terms

Operational definitions of some common terms used throughout the study have been indicated to assure consistent interpretations. Adjustment was defined as those emotional and social behavior traits of children as indicated on the Teachers' Behavior Rating Scale,[1] an instrument used in this study. Near-point and far-point visual acuity has been defined as the amount of vision, in Snellen figures, which the teachers registered on the Personal Data Sheets.[2] A partially seeing child was considered as any child enrolled in a special education program for the visually limited who used ink print as the major mode for reading.

Assumptions Underlying Hypotheses

The following assumptions must be recognized in terms of the problem and methodology:

1. Teachers responding to the Teachers' Behavior Rating Scale will have had sufficient experience with and knowledge

---

[1] The complete Teachers' Behavior Rating Scale is presented in Appendix A.

[2] The Personal Data Sheet is presented in Appendix C.

of preadolescent partially seeing children to accurately appraise the child's behavior.

2. School achievement, per se, was not considered a factor of adjustment in this study, other than as it is noted on the Personal Data Sheet.
3. Reports by teachers of the medical information on the Personal Pupil Data Sheet were sufficiently accurate to be used as described in the procedures section of Chapter II.

Hypotheses under Investigation

The major objective of this investigation was to study the relationship of adjustment of partially seeing children and their visual acuity.

The specific hypotheses for the primary aspect of the study were as follows:

1. The degree of visual acuity of preadolescent partially seeing children was inversely related to their level of adjustment.
2. No significant relationships existed between the specific behavior characteristics as shown on the adjustment scale and the visual acuity of partially seeing children.

Rationale for Hypotheses

A number of writers have commented on the need for more information about the adjustment of partially seeing children.[1] Therefore, the investigation of the adjustment dimension is acknowledged to be important and needed. So far as research findings are concerned, Cowen *et al.*[2] found evidence from their research which points in the direction of possibly greater adjustment difficulties for the partially seeing child than for children who are either blind or visually normal. Mull[3] found a low negative correlation (-.09) between degree of introversion and the presence of myopia in college girls. Pintner and Forlano,[4] on the other hand, did not find marked personality differences as measured on personality tests where a slight impairment of visual acuity was present. The first two of these studies suggest that a research hypothesis should be stated in terms of postulating less satisfactory adjustment among children having milder visual acuity losses.

---

[1] Ashcroft, *Review of Educational Research*, XXIX, 519-28; Ashcroft and Harley, *Review of Educational Research*, XXXVI, 75-92; Bateman, *Reading and Psycholinguistic Processes of Partially Seeing Children*; Roger G. Barker *et al.*, *Adjustment of Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability* (New York: Social Science Research Council, 1953); Livingston, Justman, and Gilbert, *Studies of Children with Physical Handicaps . . . .*

[2] Cowen *et al.*, *Adjustment to Visual Disability in Adolescence.*

[3] Mull, *American Journal of Psychology*, LXI, 575-76.

[4] Pintner and Forlano, *Journal of Applied Psychology*, XXVII, 284.

In further support of a directional hypothesis it has been the experience of the investigator that teachers of partially seeing children seem to express more concern about the larger number of adjustment problems among their pupils with relatively mild vision disabilities. Admittedly it is a clinical impression, but a number of years of experience and discussing "problem cases" with teachers of the partially seeing has left the impression that teachers find a smaller proportion of maladjustment among their more severely visually handicapped students. That impression, plus the hints from the research of Mull and Cowen et al., led to the statement of the first research hypothesis in its present form and, also, to the notion of testing it both by an instrument designed to measure adjustment and by the relatively independent statement of teacher judgments.

The second hypothesis is stated in a nondirectional form, for there is no clear research evidence, informed opinion, or consensus indicating the specific behaviors which go to make up either adjustment or maladjustment among partially seeing children. It is convenient, therefore, to use a nondirectional research hypothesis statement, with the expectation that any significant relationships which might appear between degree of visual acuity and specific items on the TBRS,[1] regardless of their direction, can then be isolated and studied.

Additional Questions under Investigation

Closely related to the problems to be investigated in the hypotheses were a number of questions having to do with the adjustment of partially seeing children. The questions all follow the same pattern. They ask whether there are relationships between adjustment and certain characteristics of fifth- and sixth-grade partially seeing children. Adjustment was defined as total score on the TBRS. The characteristics were as follows:

1. Sex
2. Grade
3. Age
4. Over-age
5. Residence
6. Home-school relationship

---

[1] TBRS, the abbreviation used to designate the Teachers' Behavior Rating Scale, will be used throughout the balance of the paper.

7. Type of school program
8. Years in special education
9. Etiologies of visual disabilities
10. Age at onset of vision disabilities

The previously cited references in the "Review of Literature" section of this paper supported the need for testing the proposed hypotheses and for seeking answers to the questions raised. Procedures were then determined which would lead to the resolution of these issues.

CHAPTER II

THE PROCEDURE

Design of the Study

The requirements of the problem included first determining the relationship of visual acuity to the adjustment of partially seeing children. Also, the intent was to collect and use information on the visual disabilities and other characteristics of the partially seeing subjects and to study the relationship of these measures to measures of adjustment. The realization of those objectives called for a design which followed a series of steps, each step somewhat dependent upon the results of the preceding ones. The steps in the process are briefly noted here and elaborated upon in this section of the report.

1. Determination of the sample of partially seeing children to be used.
2. Determination of identification information and educationally relevant data to be obtained about the sample.

3. Selection of the instrument to be used in data collection on adjustment.
4. Selection of this instrument for other data to be collected.
5. Administration of data collection instruments.
6. Analysis of results and other related data to test hypotheses and answer the questions posed in this study.

Subjects in the Sample Population

The sample population consists of fifth- and sixth-grade partially seeing pupils on whom it was possible to obtain visual acuity and adjustment scores from the Teachers' Behavior Rating Scale. It was considered desirable to limit the study to fifth- and sixth-grade subjects for the following reasons. These subjects would have had the greatest length of time to benefit from special education services within the elementary school. The location of subjects beyond the elementary school level involves an increase in logistical problems, due to the discontinuance of services to many partially seeing children after sixth grade and the greater variety of organizational patterns for instruction often found in the junior high and secondary school levels.

The primary source of information on the location of partially seeing children in special education programs in the United

States was examined. It was found that more than 3,600 school systems had reported 6,389 partially seeing children enrolled in elementary schools in all states as of February, 1958, the most recent date for which information was available.[1] Assuming "elementary" to mean first grade through sixth grade for most school systems, each elementary grade contained approximately 1,000 students. Counting on some growth in enrollment in the intervening years, it was estimated that a total population of 2,000 students in grades five and six might be located in 1963 and 1964.

Upon further investigation the number of children enrolled in many local programs proved too small to justify attempts to include all school systems in the study. As a result, the number to be included was reduced to approximately 1,250. The informed judgment of experts was used in selecting a sample of fifteen states and the District of Columbia which might be representative of the varieties of special education facilities for partially seeing children in the United States.[2]

---

[1] Romaine P. Mackie, Harold M. Williams, and Patricia P. Hunter, Statistics of Special Education for Exceptional Children and Youth, 1957-58, U.S. Office of Education Bulletin No. OE-35048-58 (Washington: U.S. Government Printing Office, 1963), p. 3.

[2] Special acknowledgment is made for expert assistance by John W. Jones, specialist for education of visually handicapped

Contact was made with the directors of special education in the selected states to obtain cooperation through them from the school systems having special education for partially seeing children. In three instances, only large cities in the states were contacted.[1] States represented in the sample were: California; Florida; Georgia; Illinois; Maryland; Massachusetts; Michigan; Missouri; New Jersey; New York; Ohio; Oregon; Pennsylvania; Texas; Washington, D.C.; and Wisconsin.

Representativeness of the Partially Seeing Sample Population

It became apparent early that it would be impossible to obtain a sample which could be called representative, for the characteristics of the universe of partially seeing children were not known. Some of the factors which forced this conclusion are noted below.

1. The nearest approximation of the total universe of partially seeing children receiving special education was found in a

---

children, U.S. Department of Health, Education, and Welfare, and by Helen Gibbons, consultant in education, National Society for the Prevention of Blindness.

[1] The three large cities included in the study were: Baltimore, Maryland; Detroit, Michigan; Austin, Texas.

United States Office of Education report[1] listing the school systems in the United States with elementary and secondary educational programs for partially seeing children, along with the number of children enrolled in those programs. When published, the list was at least three years old. The data had been collected from state departments of education which, in turn, had gathered information from local school systems. There was no information about the attrition which might have occurred in the process of reporting from local school districts to state departments of education and, finally, to the United States Office of Education.

2. The data in the United States Office of Education report were collected five years prior to the conduct of the study here reported. Therefore, an unknown amount of change occurred in the population of classes for partially seeing children in the interim. The fact that such changes could have occurred in significant degrees has been demonstrated.[2]

---

[1] Mackie, Williams, and Hunter, Statistics of Special Education for Exceptional Children and Youth, 1957-58.

[2] Kirk, pp. 184, 185.

3. The number or location of partially seeing children in the United States, in or out of school, was not known. The available estimates admitted to uncertainty.[1]

4. Various states have used different criteria for defining who would have been considered partially seeing children for educational purposes.[2]

5. The wide differences among states in the number of partially seeing children reported in special education programs suggested that in certain states there were significant numbers of partially seeing children who had not been identified and placed in special programs. For example, the states of Georgia, Wisconsin, and Virginia, each with total populations of approximately four million persons, reported 54, 121, and 86 partially seeing children in elementary grades, respectively.[3]

The five items above do not constitute an exhaustive list of the factors which limit knowledge about the universe of partially seeing children in the United States. However, they were sufficient to indicate that there was not a well-defined universe, and that it was not possible to be certain about representativeness of samples.

---

[1] Samuel C. Ashcroft, "Blind and Partially Seeing Children," Exceptional Children in the Schools, ed. Lloyd M. Dunn (New York: Holt, Rinehart, and Winston, Inc., 1964), p. 424.

[2] Jones and Collins, p. 32.

[3] Mackie, Williams, and Hunter, pp. 35, 78, 81.

Instrumentation

Two major data collection instruments were employed in the investigation. These were a pupil data collection sheet and a behavior rating scale to determine pupil adjustment. The first was designed for the study with the assistance of consultants; the "TBRS" was selected from the literature after considerable exploration of existing behavior scales.

Personal Pupil Data Sheet

A form called the Personal Pupil Data Sheet was used to collect information about each fifth- and sixth-grade partially seeing student (Appendix A). In addition to identifying information such as age, name, and location, the form asked for data on the educational program in which the child was enrolled, intelligence ratings, achievement in school subjects, nature and state of vision, other handicaps, and home-school relationships. Teachers were encouraged to include other information, too, which might have significant effects on educational practices for each particular child.

Teachers' Behavior Rating Scale

The Teachers' Behavior Rating Scale was developed by Cowen *et al.*[1] to obtain an objective measure of adjustment based on the subject's daily behavior in the school environment. The scale, known in this study as the TBRS, has been reproduced with scoring adjustment weights in Appendix C. The procedures used in the development of the scale and data on its validity and reliability have been shown in Appendix D.

Data Collection

All pupil information data were provided by the teachers of the partially seeing children. The Personal Data Sheets were completed by teachers from school records on the children or from the teachers' observations. The Teachers' Behavior Rating Scale was also completed by the teachers; thus the information recorded was made by competent persons.

All instructions to teachers for data collection were either by mail or telephone, with correspondence being used in the vast majority of instances. Each set of mailed instructions was pretested on teachers in local classes for partially seeing children prior to use in this study. Teachers were encouraged to write to the project office to clarify any questions they may have had.

---

[1] Cowen *et al.*, pp. 193-201.

Data Treatment

The data were keyed and card punched. Usual verification procedures were used. The necessary data-processing programs were selected or constructed and the data were then analyzed by IBM 7070 and 7090 computers at the University of Pittsburgh Computer Center.[1]

For the most part, the analysis of the data was based on correlational procedures. Pearson product-moment correlations (r) were used throughout the study in testing the hypotheses and in seeking answers to the questions asked. In some instances a test of significance was applied using an F-ratio, as indicated in the Results and Conclusions chapter of this report.

---

[1] Acknowledgment is made for the National Science Foundation grants (GP2091 and G-11309) for partial support for work awarded to the Computer Center, University of Pittsburgh.

CHAPTER III

RESULTS AND CONCLUSIONS

In this chapter the findings and results are first presented. Where appropriate they are related to studies cited in the "Review of Literature" section. Statistical analyses are reported in relation to the hypotheses and questions which were investigated. In the final section of the chapter are the conclusions.

Results

Characteristics of the Sample Population

State of residence, grade level, sex

Table 1 shows three characteristics of the sample population. Indicated are the number of subjects by state of residence, grade level in which the child was enrolled, and the sex distribution.

The total sample included 753 subjects. Males represented 57.1 percent and females 42.9 percent of the sample, a ratio of nearly six boys to every four girls. The distribution by sex was

TABLE 1

DISTRIBUTION OF SUBJECTS IN THE SAMPLE POPULATION BY STATE OF RESIDENCE, GRADE LEVEL, AND SEX

State of Residence	Grade Five			Grade Six			Both Grades		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Calif.	19	15	34	17	19	36	36	34	70
Fla.	4	4	8	2	1	3	6	5	11
Ga.	8	11	19	12	4	16	20	15	35
Ill.	33	24	57	33	23	56	66	47	113
Md.[a]	4	3	7	4	2	6	8	5	13
Mass.	6	1	7	8	2	10	14	3	17
Mich.[b]	25	14	39	8	12	20	33	26	59
Mo.	10	2	12	7	7	14	17	9	26
N.J.	4	2	6	8	5	13	12	7	19
N.Y.	38	28	66	50	39	89	88	67	155
Ohio	30	19	49	35	25	60	65	44	109
Ore.	0	3	3	4	3	7	4	6	10
Pa.	18	16	34	23	21	44	41	37	78
Tex.[c]	1	0	1	1	0	1	2	0	2
Wash., D.C..	2	4	6	2	0	2	4	4	8
Wis.	6	8	14	8	6	14	14	14	28
Total	208	154	362	222	169	391	430	323	753
Pct. by sex	57.5	42.5	100.0	56.8	43.2	100.0	57.1	42.9	100.0
Pct. by grade . . .	--	--	48.1	--	--	51.9	--	--	100.0

[a] Baltimore only.

[b] Detroit only.

[c] Austin only.

not essentially different from the percentages of the five studies[1] reviewed in the previous section.

The preponderance of males was considered common to all studies reported, though the reason for the finding was not clear and has apparently not been investigated. It is apparent from Table 1 that the subjects were fairly evenly distributed between the fifth and sixth grades. The fifth grade enrolled 48.1 percent of the subjects, and the sixth grade 51.9. percent.

Age of subjects

Reported ages in months are presented for both fifth and sixth grades, and by sex, in Table 2. Boys were found to be slightly older (1.3 months) than girls. The age ranges exceed those normally considered appropriate for each grade level.

A normal age range for fifth-grade children was considered as 115 months to 126 months (5 years and 7 months, to 6 years, as of September 1 of the year of admission to first grade), with a mean age of 120.5 months. Four subjects were 126 months or less, and 347 were more than 126 months of age. Fifth-grade subjects were, on the average, 15 months over age for grade.

---

[1] Pintner, Journal of Educational Psychology, XXXIII, 268; Kerby, Exceptional Children, XVIII, 139; Livingston, Justman, and Gilbert, p. 5; Bateman, p. 10; Kirk, p. 184.

TABLE 2

AGES,[a] IN MONTHS, OF SUBJECTS BY GRADE AND SEX (N=719)

Grade and Sex	Mean	S.D.	Range	Number
Fifth grade:				
Male	141.6	9.59	119-172	201
Female	140.4	9.61	122-172	150
Total	141.0	9.60	119-172	351
Sixth grade:				
Male	153.7	9.30	128-176	210
Female	152.4	8.40	134-175	158
Total	153.0	8.85	128-176	368
Both grades:				
Male	147.7	9.50	119-176	411
Female	146.4	9.00	122-176	308
Total	147.0	9.23	119-176	719

[a] Ages were recorded as of September 1, 1964.

Sixth-grade subjects also were found, on an average, to be 15 months over-age for grade when compared to the maximum age of 138 months, with a range of 127 months to 138 months of age. Six subjects were 138 months or less, and 362 subjects were more than 138 months of age.

For both grades, 97.2 percent of the subjects reported were over-age. Over-age for grade level has been recognized as an educational characteristic of visually handicapped children.[1] This age-grade relationship factor could have been partly a function of policies which prescribe two years of kindergarten for partially seeing children. Livingston, Justman, and Gilbert reported on 116 sixth-grade children with a mean age of 11 years and 10 months (142 months) and a range of approximately four years. The subjects in that study were from one metropolitan school system, where it could be assumed that practices relative to age of admission were consistent for all the subjects.[2] Morgan considered the subjects of his study to be three grades lower than was expected for their ages.[3] Wallace reported 53 percent of the school systems from 106 cities having populations of 100,000 or more had a delayed entrance age for partially seeing children.[1]

---

[1] Ashcroft, in Exceptional Children in the Schools, p. 432.

[2] Livingston, Justman, and Gilbert, p. 10.

[3] Morgan, Journal of Educational Psychology, XXXV, 70.

Residence of subjects

Teachers reported children as having lived in as many as six different home situations. For the sample population used in this study, the frequencies and percentage of children living in each setting are indicated in Table 3.

The subjects were reported most frequently to be living with at least one natural parent (93.1 percent), and in the majority of those instances (88.7 percent) with both parents. Only 3.4 percent of the subjects were living with persons other than relatives or parents.

Home-school cooperation

Table 4 represents the results of the teachers' rankings of cooperation they found between the home and the school. The results were based on only 746 subjects as information on home-school cooperation was not provided for seven subjects.

---

[1] Helen M. Wallace, "School Services for Partially Seeing and Blind Children in Urban Areas," Sight-Saving Review, XXIX (Fall, 1959), 161, 162.

TABLE 3

CHILDREN'S RESIDENCE
(N=753)

Residence	No.	Pct.
1. Home of natural parents	668	88.7
2. One natural parent and relatives	33	4.4
3. Relatives other than natural parents	26	3.5
4. Foster parents or boarding home	13	1.7
5. Home of parents by adoption	8	1.1
6. Children's home or residential school	3	0.4
7. Unknown	2	0.2
Total	753	100.0

TABLE 4

COOPERATION BETWEEN HOME AND SCHOOL: PERCENTAGES AND FREQUENCIES BY GRADE AND SEX (N=746)

Degree of Cooperation of Home with School	Male		Female		Total	
	No.	Pct.	No.	Pct.	No.	Pct.
Fifth Grade						
Very cooperative	128	61.8	89	59.3	217	60.5
Mildly cooperative	61	29.5	49	32.7	110	31.1
Uncooperative	10	4.8	7	4.7	17	4.8
Unknown cooperation	8	3.9	5	3.3	13	3.6
Sixth Grade						
Very cooperative	127	57.5	100	59.5	227	58.5
Mildly cooperative	74	33.5	46	27.4	120	30.4
Uncooperative	14	6.3	14	8.3	28	7.3
Unknown cooperation	6	2.7	8	4.8	14	3.8
Both Grades						
Very cooperative	255	59.6	189	59.4	444	59.5
Mildly cooperative	135	31.5	95	30.0	230	30.8
Uncooperative	24	5.6	21	6.5	45	6.0
Unknown cooperation	14	3.3	13	4.1	27	3.7

The homes of the majority (59.5 percent) of the total sample were considered by the teachers as being very cooperative. Grade placement and sex did not appear to be appreciably related to home-school cooperation.

Type of special education program

In Table 5, six administrative organizational patterns for the education of partially seeing children are reported with frequencies and percentages of subjects by sex and grade.

The special class was the most generally used single educational plan or setting for this sample (46.9 percent of subjects reported). However, the total percentage of partially seeing subjects reported in other organizational patterns who might have been receiving part or all of their education with normally seeing children was 51.1 percent.

Jones and Collins reported that the most prevalent type of special education program was the itinerant one. However, their survey enumerated teachers and programs, and the data for the investigation were collected in terms of pupils. Therefore, it is not possible to make a comparison with their findings, since it could be that special class programs are relatively small in number but, at the same time, enroll the largest total number of pupils.[1]

---

[1] Jones and Collins, p. 11.

TABLE 5

DISTRIBUTION OF SUBJECTS BY TYPE OF SPECIAL EDUCATION PROGRAM[a]

(N=751)

Special Education Program	Male		Female		Total	
	No.	Pct.	No.	Pct.	No.	Pct.
Fifth Grade						
1. Special class	111	53.4	63	40.9	174	47.2
2. Resource room	72	34.6	53	34.5	125	34.5
3. Itinerant teacher	19	9.2	33	21.4	52	15.3
4. Residential school	3	1.4	1	0.6	4	1.0
5. Regular class	3	1.4	4	2.6	7	2.0
6. Home instruction	0	0.0	0	0.0	0	0.0
7. Not reported	0	--	0	--	0	--
Total	208	100.0	154	100.0	362	100.0
Sixth Grade						
1. Special class	101	45.9	80	47.3	181	46.6
2. Resource room	71	32.3	59	34.9	130	33.6
3. Itinerant teacher	40	18.1	23	13.6	63	15.8
4. Residential school	5	2.3	3	1.8	8	2.0
5. Regular class	2	0.9	2	1.2	4	1.1
6. Home instruction	1	0.5	2	1.2	3	0.9
7. Not reported	2	--	0	--	2	--
Total	222	100.0	169	100.0	391	100.0
Both Grades						
1. Special class	212	49.7	143	44.1	355	46.9
2. Resource room	143	33.4	112	34.7	255	34.0
3. Itinerant teacher	59	13.7	56	17.5	115	15.6
4. Residential school	8	1.8	4	1.2	12	1.5
5. Regular class	5	1.1	6	1.9	11	1.5
6. Home instruction	1	0.3	2	0.6	3	0.5
7. Not reported	2	--	0	--	2	--
Total	430	100.0	323	100.0	753	100.0

[a] Percentages computed only on those reported (N=751).

Number of years in special education programs

The number of years the subjects were enrolled in special education programs is reported by grade and sex for 736 subjects in Table 6.

The fifth-grade subjects ranged in enrollment in special education programs from less than one year to eight years. The sixth-grade range was from less than one year to ten years. The mean number of years in programs was 4.5 for fifth grade and 5.5 for sixth grade. No appreciable differences were found between the sexes.

Kirk, while not specifying the grades included, found 53 percent of the pupils in one large city remained in the program five years, while only 17 percent stayed for ten years during the 1948-1963 period. The subjects in this study did not enter the special education program until after kindergarten and frequently not until after first grade.[1]

Visual acuity

The near-point and far-point visual acuity measurements were classified by severity as shown in Table 7.

---

[1] Edith Cohoe Kirk, "The Detroit Program for Partially Seeing Children," Sight-Saving Review, XXXV (Winter, 1965), 221.

TABLE 6

NUMBER OF YEARS IN SPECIAL EDUCATION PROGRAMS (N=736)

Time in Years	Fifth Grade			Sixth Grade			Both Grades		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
				Frequencies					
< One	14	11	25	1	3	4	15	14	29
One	16	6	22	13	9	22	29	15	44
Two	24	12	36	18	13	31	42	25	67
Three	35	37	72	38	26	64	73	63	136
Four	49	39	88	35	25	60	84	64	148
Five	50	31	81	49	40	89	99	71	170
Six	11	9	20	43	38	81	54	47	101
Seven	4	2	6	15	9	24	19	11	30
Eight	0	1	1	2	1	3	2	2	4
Nine	0	0	0	2	1	3	2	1	3
Ten	0	0	0	3	1	4	3	1	4
Total	203	148	351	219	166	385	422	314	736
Mean	4.5	4.6	4.6	5.5	5.4	5.5	5.0	5.0	5.0
S.D.	1.7	1.6	1.7	1.8	1.8	1.8	1.8	1.7	1.8
				Percentages					
< One	6.9	7.4	7.2	0.5	1.8	1.1	3.7	4.6	4.2
One	7.9	4.1	6.0	5.9	5.4	5.6	6.9	4.7	5.8
Two	11.8	8.1	9.9	8.2	7.8	8.0	10.0	7.8	8.9
Three	17.2	25.0	21.1	17.4	15.7	16.5	17.3	20.3	18.8
Four	24.2	26.4	25.3	16.0	15.1	15.5	20.0	20.7	20.3
Five	24.6	20.8	22.7	22.4	24.1	23.2	23.5	22.7	23.1
Six	5.4	6.1	5.7	19.6	22.9	21.2	12.5	14.5	13.5
Seven	2.0	1.4	1.7	6.8	5.4	6.1	4.4	3.4	3.9
Eight	0.0	0.7	0.4	0.9	0.6	0.7	0.5	0.7	0.6
Nine	0.0	0.0	0.0	0.9	0.6	0.7	0.5	0.3	0.4
Ten	0.0	0.0	0.0	1.4	1.6	1.4	0.7	0.3	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 7

CLASSIFICATION SCHEME FOR DEGREE OF VISUAL ACUITY IN BETTER EYE AFTER CORRECTION

Visual Acuity Category	Near-Point Vision	Far-Point Vision
1. Normal . .	14/14	20/20
2. Very mild defect . . .	Visual acuity better than 14/28 in the better eye after correction	Visual acuity better than 20/40 in the better eye after correction
3. Mild defect . . .	Visual acuity from 14/28 to, but not including, 14/48 in the better eye after correction	Visual acuity from 20/40 to, but not including, 20/70 in the better eye after correction
4. Moderate defect . . .	Visual acuity from 14/48 through 14/140 in the better eye after correction	Visual acuity from 20/70 through 20/200 in the better eye after correction
5. Severe defect . . .	Visual acuity less than 14/140 in the better eye after correction	Visual acuity less than 20/200 in the better eye after correction

The four descriptive categories for far-point vision were adapted from Bateman.[1] Comparable near-point visual acuity classifications were developed by the investigator and added for this study. The relevant data on comparability of near-point and far-point visual acuities were found in medical literature.[2]

Numbers and percentages of subjects in each of the five visual acuity categories by grade level for both near-point and far-point visual acuity are reported in Table 8. In addition, the number of subjects on whom visual acuity was not reported by the teachers are included for each grade level and acuity distance.

The mean near-point visual acuity category for fifth-grade subjects was 4.0, with a standard deviation of 1.5. A mean of 3.9 was found on near-point visual acuity for sixth-grade subjects, with a 1.5 standard deviation. For far-point visual acuity both fifth and sixth grades had means of 3.8 and a standard deviation of 0.8. This indicated that the typical partially seeing child was between the mild and moderate categories but closest to the moderate classification.

---

[1] Bateman, p. 10.

[2] Conrad Berens and Joshua Zuckerman, Diagnostic Examination of the Eye (Philadelphia: J. B. Lippincott Co., 1946), p. 450.

TABLE 8

FREQUENCIES AND PERCENTAGES OF SUBJECTS ACCORDING TO VISUAL ACUITY IN BETTER EYE AFTER CORRECTION[a]

Visual Acuity Classification	Fifth Grade		Sixth Grade		Both Grades	
	No.	Pct.	No.	Pct.	No.	Pct.
Near Point						
1. None measurable	2	1.2	3	1.7	5	1.5
2. Very mild	30	18.6	29	16.0	59	17.3
3. Mild	43	26.7	72	39.8	115	33.6
4. Moderate	65	40.4	60	33.1	125	36.5
5. Severe	21	13.1	17	9.4	38	11.1
6. Not reported	201	--	210	--	411	--
Total	362	100.0	391	100.0	753	100.0
Far Point						
1. None measurable	1	0.3	2	0.5	3	0.4
2. Very mild	22	6.3	23	6.3	45	6.3
3. Mild	60	17.3	86	22.7	146	20.1
4. Moderate	218	62.8	223	58.9	441	60.8
5. Severe	46	13.3	44	11.6	90	12.4
6. Not reported	15	--	13	--	28	--
Total	362	100.0	391	100.0	753	100.0

[a] Percentages in this table are computed on reported visual acuities only.

In Table 8, 50.9 percent of the subjects (N=342) with near-point visual acuity are reported in the mild and very mild classifications; thus over one-half of the subjects had better than 14/48 near-point visual acuity. Another 11.1 percent were in the severe defect classification with visual acuities of less than 14/140. A little over one-third, 36.5 percent of the subjects, were found within the moderate defect class.

The percentages of subjects (N=725) classified with reported far-point visual acuity followed the same pattern. However, more subjects, 60.8 percent, were in the moderate class, with 26.4 percent in the mild and very mild categories, and 12.4 percent were in the severe defect group. These percentages closely approximated the findings of other research reported earlier in this study. The percentages in the mild and very mild categories were slightly smaller than the percentages reported in the previous studies, and the percentages in the severe defect group were slightly larger, which confirmed the observed trend previously noted.

The extent to which near-point visual acuity has been considered in educational planning is unknown. In typical school reading activities, near-point vision is called upon for use more frequently than is far-point vision. Yet teachers of partially seeing children had far-point acuity data on their pupils much more commonly than they had near-point data; the ratio of the two was over 2 to 1. Also, in less than half of the cases, 42 percent, did the teachers have both far-point and near-point data on their students.

Information on the visual acuity categories of the 318 children on whom both near-point and far-point data were available is reported in Table 9, which shows the extent to which children were classified in the same categories for both near-point and far-point acuity. For example, there were five children in the near-point normal category. None of these five children were in the far-point normal category; rather, they were scattered across other far-point categories--two in very mild, two in mild, and one in moderate.

Considering the four visual acuity groups which represented degree of measured vision, inspection of Table 9 reveals that a range from 3.8 percent to 28.0 percent of the subjects were in the same groups on both near-point and far-point visual acuity measures. The overall percentage of subjects in the same groups was 48.8 percent. Expressing the difference of classification by severity in a percentage figure, 51.2 percent of the subjects were found to be in different categories at near-point and far-point visual acuity distances. The largest difference of categories was shown when fifty-eight subjects (18.2 percent) were classified in the mild category

TABLE 9

DISTRIBUTION OF SUBJECTS ACCORDING TO BOTH NEAR AND FAR POINT VISUAL ACUITY MEASUREMENTS (N=318)

Near-Point Visual Acuity Category	Far-Point Visual Acuity Category									
	Normal		Very Mild		Mild		Moderate		Severe	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Normal	0	0.0	2	0.6	2	0.6	1	0.3	0	0.0
Very mild . .	1	0.3	12	3.8	15	4.7	28	8.8	3	1.0
Mild	0	0.0	7	2.2	37	11.6	58	18.2	7	2.2
Moderate . .	0	0.0	1	0.3	10	3.2	89	28.0	14	4.4
Severe	0	0.0	0	0.0	0	0.0	14	4.4	17	5.4

on near-point and in the moderate category on far-point measurement. The findings in this study provide no guarantee that children in one category by severity at one visual distance will necessarily be in the same visual category at the other distance.

Visual field information

Reports on the visual fields of partially seeing pupils were very rare. There were too few of them to include in the data analysis. Teachers had been asked to include visual field data in all instances when such data were available to them. The fact that only a very small number were reported suggested that visual field information was not included in teachers' records in the great majority of cases.

Etiologies reported

There were a number of ways of describing types of visual disabilities. Two were chosen for presenting the visual disability data collected in this study.[1] First, in Table 10 the data are

---

[1] Special appreciation is expressed to Dr. Murray McCaslin, chairman, Department of Ophthalmology, Medical School, University of Pittsburgh, and to Mrs. Marcella Goldberg, A.C.S.W., director of welfare services, Pittsburgh Branch, Pennsylvania Association for the Blind, for suggesting the classification methods used and for the laborious task of classifying the data reports.

TABLE 10

OCCURRENCES OF DISABILITIES BY SITE AND TYPE
(N=753)

Disability Classification	Fifth Grade		Sixth Grade		Both Grades	
	No.	Pct.	No.	Pct.	No.	Pct.
1. Myopia	128	35.4	140	35.8	268	35.6
2. Hyperopia	63	17.4	98	25.1	161	21.3
3. Juvenile glaucoma	6	1.7	9	2.3	15	2.0
4. Albinism	27	7.5	21	5.4	48	6.5
5. Coloboma	6	1.7	7	1.8	13	1.8
6. Anophthalmus	0	0.0	3	0.8	3	0.4
7. Neurophthalmus	41	11.3	33	8.4	74	9.9
8. Aniridia	0	0.0	0	0.0	0	0.0
9. Other general affections of globe	3	0.8	1	0.3	4	0.6
10. Conjunctival	0	0.0	0	0.0	0	0.0
11. Cornea	2	0.6	6	1.5	8	1.1
12. Cataract and aphakia	44	12.2	45	11.5	89	11.9
13. Dislocated lens	9	2.5	12	3.1	21	2.8
14. Vitreous, iris and ciliary body	3	0.8	3	0.8	6	0.8
15. Retrolental fibroplasia	55	15.2	45	11.5	100	13.4
16. Retinal-macular degeneration	18	5.0	25	6.4	43	5.7
17. Other retinal conditions	29	8.0	23	5.9	52	6.9
18. Optic nerve pathway cortico-visual center	2	0.6	1	0.3	3	0.5
19. Atrophy	21	5.8	23	5.9	44	5.9
20. Other nerve pathway conditions	5	1.4	3	0.8	8	1.1
21. Other specified affections	6	1.7	12	3.1	18	2.4
22. Motility	43	11.9	38	9.7	81	10.8
23. Nystagmus	0	0.0	0	0.0	0	0.0
Total	511		548		1,059	

organized in the classification schema recommended by the National Society for the Prevention of Blindness.[1] This classification provided a twofold approach. The site of the disability in the eye provided one dimension of the classification and the type of disability within that site was the second dimension; thus its name: site and type classification. Then, in Table 11, the structural classification of the Pennsylvania Association for the Blind is used to show the same visual disabilities in another frame of reference. The structural classification took its name from the unidimensional approach to organization by reference to the particular part of the structure of the eye which was affected.

Some partially seeing children had more than one kind of visual disability. Also, some kinds of disability called for multiple classification in the site and type and in the structural organizing schemes. Those factors account for the discrepancies in Tables 10 and 11 between the N of 753 and the figures given as totals. The entries given in these tables are for disabilities, not subjects.

Inspection of Table 10 shows that myopia was the most commonly reported disability. It accounted for 35.6 percent of the 1,059

---

[1] Ralph G. Hurlin, "1960 Revision of the Standard Classification of the Causes of Blindness," Sight-Saving Review, XXX (Fall, 1960), 153-56.

TABLE 11

OCCURRENCES OF DISABILITIES BY STRUCTURAL CLASSIFICATION
(N=753)

Structural Classification	Fifth Grade		Sixth Grade		Both Grades	
	No.	Pct.	No.	Pct.	No.	Pct.
1. Cornea	2	0.8	5	1.3	7	1.0
2. Iris and ciliary body (uveal tract)	30	8.3	26	6.6	56	7.5
3. Lens	52	14.4	58	14.8	110	14.6
4. Vitreous	2	0.6	1	0.3	3	0.5
5. Retina and choroid (retinopathy)	121	33.4	122	31.2	243	32.3
6. Optic nerve	27	7.5	26	6.6	53	7.1
7. Neuromuscular (motility-phorias nystagmus-pathways)	146	40.3	162	41.4	308	40.9
8. Enucleation	2	0.6	6	1.5	8	1.1
9. Refractive errors	182	50.3	222	56.8	404	53.6
10. Eyeball	9	2.5	11	2.8	20	2.7
Total	573		639		1,212	

disabilities reported. The three most frequently reported disabilities --myopia, hyperopia, and retrolental fibroplasia--accounted for 70.3 percent of all the disabilities reported.

In Table 11 refractive errors are the most common (53.9 percent) structural condition listed. The three structural classifications most commonly reported were refractive errors, neuromuscular, and the combination of retina and choroid deviations.

Most common etiologies from other studies included myopia (29 percent), cataract (15 percent), and retrolental fibroplasia (13 percent);[1] and refractive errors (48.7 percent), developmental anomalies of structure (21.5 percent), and defects of muscle function (18.2 percent).[2] Similarly, Kirk reported refractive errors (48 percent), developmental anomalies (27 percent), and defects of muscle function (17 percent).[3]

As was previously pointed out, the variety of classification systems which have been used in related studies made precise comparisons impossible. In addition, medical reports to teachers often have been inconsistent and incomplete, making the collection of information most difficult. All such factors considered, there appeared to be a degree of similarity between the findings of this investigation and others, at least with respect to the major etiological categories.

---

[1] Bateman, p. 12.

[2] Kerby, Exceptional Children, XVIII, 138.

[3] Kirk, Sight-Saving Review, XXXV, 221.

Age at onset of visual disability

The age at onset of visual disability as reported by teachers for 547 subjects is distributed in Table 12. The frequencies are shown by grade and sex.

The average age at onset for the total sample was 2.6 years. The median, however, was at birth. Congenital defects accounted for 61.0 percent of the sample. Adventitious losses (any time other than congenital) therefore comprised 39 percent of the sample. Of the subjects from the total sample (N=753), 27 percent did not report age at onset.

Additional handicapping conditions

Frequencies of subjects with handicaps in addition to the visual disability were recorded by grade and sex (see Table 13).

A total of 583 additional handicaps were recorded. The mean number of handicaps per child was found to be 1.8, including the vision handicaps at the rate of one per child. In some instances one child may have had more than one or several different conditions.

TABLE 12

DISTRIBUTION OF SUBJECTS BY AGE AT ONSET OF VISION DISABILITY

(N=547)

Age in Years	Fifth Grade			Sixth Grade			Both Grades		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Congenital .	89	66	155	104	74	178	193	140	333
One	13	14	27	21	21	42	34	35	69
Two	2	3	5	3	3	6	5	6	11
Three	1	1	2	4	0	4	5	1	6
Four	3	5	8	2	1	3	5	6	11
Five	1	1	2	3	3	6	4	4	8
Six	10	4	14	10	1	11	20	5	25
Seven	7	6	13	3	2	5	10	8	18
Eight	7	4	11	7	7	14	14	11	25
Nine	1	2	3	2	2	4	3	4	7
Ten	1	1	2	2	2	4	3	3	6
Eleven	0	1	1	1	0	1	1	1	2
Twelve . . .	10	5	15	9	2	11	19	7	26
Total	145	113	258	171	118	289	316	231	547
Mean	2.4	3.2	2.8	2.1	2.6	2.4	2.3	2.9	2.6
S.D.	3.8	3.5	3.7	3.6	3.0	3.3	3.7	3.3	3.5

TABLE 13

FREQUENCIES OF ADDITIONAL HANDICAPS

Handicap	Fifth Grade			Sixth Grade			Both Grades		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Emotional . .	45	32	77	49	27	76	94	59	153
Social	27	14	41	22	27	49	49	41	90
Speech . . .	31	14	45	27	16	43	58	30	88
Health	21	27	48	10	14	24	31	41	72
Intellectual .	12	20	32	13	23	36	25	43	68
Hearing . . .	8	6	14	12	9	21	20	15	35
Cosmetic . .	5	5	10	3	13	16	8	18	26
Orthopedic .	6	7	13	3	3	6	9	10	19
Other	13	4	17	11	4	15	24	8	32
Total	168	129	297	150	136	286	318	265	583

Therefore, Table 13 shows the prevalence of additional handicaps, and not necessarily the specific number of children who had one or more additional handicapping conditions.

Emotional and social handicaps grouped together were most common, and accounted for 58 percent of all additional handicaps. Physical handicaps--health, hearing, cosmetic, and orthopedic--accounted for only 26 percent of the additional handicaps. The data showed that 318 or 57.1 percent of the additional handicaps were associated with males in this sample which consisted of 54.6 percent males.

Teachers' estimates of achievement

Teachers' estimates of achievement in eight subject-matter areas were recorded. Their judgments of achievement grade level are presented by grade placement and sex in Table 14.

The mean achievement level over all eight subject areas for fifth grade was 4.7, and for sixth grade it was 5.6. The greatest range for any area was eight grades in spelling. Three nonacademic subjects--music, art, and physical education--more closely approximated normal grade level. In both fifth and sixth grades, the subjects were reported to have lowest achievement in reading, with the

TABLE 14

TEACHERS' ESTIMATES OF ACHIEVEMENT ACCORDING TO GRADE LEVELS[a]

Subject and Sex	Fifth Grade				Sixth Grade				Both Grades			
	No.	M	SD	R	No.	M	SD	R	No.	M	SD	R
Reading:												
Boys	203	4.4	1.00	7	210	5.3	1.22	7	413	4.8	1.11	7
Girls	148	4.5	0.85	5	163	5.3	1.06	7	311	4.9	0.96	7
Both	351	4.5	0.93	6	373	5.3	1.14	7	724	4.9	1.04	7
Spelling:												
Boys	200	4.5	1.02	8	208	5.3	1.16	7	408	4.9	1.04	8
Girls	144	4.6	0.87	5	165	5.5	0.99	7	309	5.0	0.93	7
Both	344	4.6	0.95	8	373	5.4	1.08	7	717	5.0	0.99	8
Mathematics:												
Boys	202	4.6	0.73	5	212	5.5	0.90	7	414	5.0	0.82	7
Girls	147	4.5	0.77	5	164	5.5	0.84	5	311	5.0	0.81	6
Both	349	4.6	0.75	6	376	5.5	0.87	7	725	5.0	0.82	7
Science:												
Boys	188	4.7	0.69	6	203	5.5	1.05	7	391	5.1	1.74	7
Girls	137	4.6	0.72	4	153	5.5	0.89	6	290	5.0	0.81	6
Both	325	4.7	0.71	6	356	5.5	0.97	7	681	5.1	0.78	7
Soc. Studies:												
Boys	187	4.7	0.66	4	205	5.5	1.03	7	391	5.1	0.85	7
Girls	139	4.7	0.67	5	156	5.6	0.84	6	295	5.2	0.76	7
Both	326	4.7	0.67	5	361	5.6	0.94	7	686	5.2	0.81	7
Music:												
Boys	169	4.9	0.45	3	179	5.8	0.58	4	348	5.4	0.52	4
Girls	124	4.9	0.51	4	136	5.9	0.54	3	260	5.4	0.53	4
Both	287	4.9	0.48	4	315	5.9	0.56	4	608	5.4	0.53	5
Art:												
Boys	164	4.8	0.53	4	175	5.8	0.62	4	339	5.3	0.58	5
Girls	123	4.8	0.61	4	135	5.7	0.63	3	258	5.3	0.62	4
Both	287	4.8	0.57	4	310	5.8	0.63	4	597	5.3	0.60	5
Phys. Ed.:												
Boys	147	4.9	0.49	3	161	5.8	0.56	5	308	5.4	0.83	5
Girls	106	4.8	0.62	5	119	5.8	0.56	3	225	5.3	0.59	5
Both	253	4.9	0.56	5	280	5.8	0.56	5	533	5.4	0.56	5

[a] Abbreviations: M = Mean; SD = Standard deviation; R = Range.

means being 4.5 grade level in fifth grade and 5.3 grade level for sixth grade.

Livingston, Justman, and Gilbert found a correlation of .51 between teacher estimates of pupil achievement and achievement test scores, with agreement found in approximately 75 percent of the cases in determining which children were working at or below capacity. The subjects were not rated by grade level, as the large-type edition of the achievement test did not provide age and grade norms. The authors believed the age and grade equivalents of the standard test could not be utilized.[1] Direct comparisons of achievement were therefore impossible to make between this study and that of Livingston, Justman, and Gilbert.

It is noteworthy that the fifth- and sixth-grade children in this study were consistently underachieving in relation to grade placement, as far as their teachers were concerned. The achievement estimates from teachers were collected in the eighth month of the school year. Therefore, expectancy in terms of grade placement was 5.8 and 6.8, respectively, and the teacher estimates of achievement were, in turn, 4.7 and 5.6, each being more than a year below grade levels normally anticipated.

---

[1] Livingston, Justman, and Gilbert, p. 16.

Intelligence quotients

Intelligence quotients were reported for 659 (87.9 percent) of the subjects in this study. The means, standard deviations, and ranges are presented by grade and sex in Table 15.

Intelligence quotient information for partially seeing children has been reported in several previous studies. Pintner reported a mean I.Q. of 95.1 for 602 subjects on an enlarged edition of the Binet.[1] Livingston, Justman, and Gilbert's sample of 116 sixth-grade children had a mean I.Q. of 88.9 and a range of sixty points in intelligence quotients.[2] Bateman found a mean I.Q. of 100 for 131 subjects, using the Stanford-Binet and the Wechsler Intelligence Scale for Children (Verbal).[3] Kirk, for the years 1948-1955, reported the mean I.Q. of children given individual tests was 90, and for the period 1956-1963 it was 89.[4]

The intelligence quotients as reported in this investigation showed an overall range for both grades from 60 to 148, with a

---

[1] Pintner, Journal of Educational Psychology, XXXIII, 271.

[2] Livingston, Justman, and Gilbert, p. 11.

[3] Bateman, p. 9.

[4] Kirk, Sight-Saving Review, XXXV, 222.

TABLE 15

INTELLIGENCE QUOTIENTS OF SUBJECTS BY GRADE AND SEX (N=659)

Grade and Sex	Mean	S.D.	Range	Number
Fifth grade:				
Male	95.9	13.3	62-148	182
Female	95.7	15.3	61-131	135
Total	95.8	14.3	61-148	317
Sixth grade:				
Male	96.5	13.9	66-139	194
Female	94.9	14.6	60-143	148
Total	95.7	14.3	60-143	342
Both grades:				
Male	96.2	13.6	62-148	376
Female	95.3	15.0	60-143	283
Total	95.8	14.3	60-148	659

mean intelligence quotient of 95.8. Little difference between either grades or sexes was observed.

The intelligence quotients were reported by the teachers from the subjects' school records. The testing conditions were not known. Adaptations in tests or testing procedures, if they were used, were not indicated. A variety of tests were used in determining the intelligence quotients (Table 16).

Since it has been established that partially seeing children tend to read more slowly than children who are not visually handicapped,[1] and since group intelligence tests usually were administered under timed conditions which put some premium on speed of reading, it was probable that the mean intelligence quotient of 95.8 was an underestimate of the intelligence of the population used in this study.

Intelligence tests administered

Tabulation showed that nineteen different intelligence tests were used to obtain the intelligence quotients of the subjects. The names of the tests and the frequencies and percentages of subjects having been administered each test are shown in Table 16. Few, if

---

[1] Jones, p. 25.

TABLE 16

FREQUENCIES OF VARIOUS INTELLIGENCE TESTS ADMINISTERED
(N=735)

Name of Test	No.	Pct.
1. Stanford-Binet	273	36.3
2. Wechsler Intelligence Scale for Children	121	16.1
3. Not reported	102	13.6
4. Otis (Beta EM)	52	6.9
5. California Test of Mental Maturity	47	6.2
6. Kuhlman-Anderson	43	5.7
7. Hayes Interim Binet	26	3.5
8. Detroit Test of Learning Aptitude	24	3.2
9. Pintner-Cunningham Verbal A	24	3.2
10. Lorge-Thorndike	16	2.2
11. SRA Primary Mental Abilities	9	0.9
12. Henmon-Nelson	4	0.5
13. Kent Emergency	4	0.5
14. Ammons Picture Vocabulary Test Form A	3	0.4
15. Columbia Mental Maturity	2	0.3
16. Detroit Beginning First Grade Intelligence Test	1	0.1
17. Pintner-Durost Elementary	1	0.1
18. Pintner-Patterson	1	0.1
19. Goodenough Draw-A-Man	1	0.1
20. Peabody Picture Vocabulary Test	1	0.1
Total	753	100.0

any, of the group tests reported are published in adapted form for the partially seeing.

This finding suggested the need for the development of modifications of group intelligence tests for use with the partially seeing. Enlargement of type size and relaxation in time limits to accommodate slower reading speeds would be important elements in any such modifications. Apparently the intelligence of partially seeing children has often been assessed by instruments which have placed them at a disadvantage by virtue of the test format and administration requirements.

Teachers' Behavior Rating Scale Scores

The subjects' mean scores and standard deviations on fifteen behavior characteristics from the TBRS were computed. The mean scores, standard deviations, and totals are shown for both grades and sexes in Table 17. The fifteen behavior characteristics as well as the items which were included in them are given in detail in Appendix C. The findings in Table 17 are used later in this chapter in testing the hypotheses and answering the questions posed in the investigation.

TABLE 17

TEACHERS' BEHAVIOR RATING SCALE SCORES BY GRADE AND SEX

(N=753)

TBRS Characteristic[a]	Grade[b]	Male		Female		Both	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
1. Dependence on others (5)	Fifth	3.3	1.7	3.6	1.7	3.5	1.7
	Sixth	3.8	1.5	4.0	1.5	3.9	1.5
	Both	3.6	1.6	3.8	1.6	3.7	1.6
2. Assertiveness (4)	Fifth	3.3	0.2	3.2	1.0	3.3	0.6
	Sixth	3.3	1.0	3.3	1.0	3.3	1.0
	Both	3.3	0.6	3.3	1.0	3.3	0.8
3. Tendency to worry (4)	Fifth	2.8	1.0	2.8	1.0	2.8	1.0
	Sixth	2.9	1.0	2.9	1.0	2.9	1.0
	Both	2.8	1.0	2.8	1.0	2.8	1.0
4. Criticism of others (5)	Fifth	3.6	1.4	3.5	1.4	3.5	1.4
	Sixth	3.6	1.4	3.9	1.2	3.8	1.3
	Both	3.6	1.4	3.7	1.4	3.7	1.4
5. Reaction to criticism (5) . . .	Fifth	3.4	1.4	3.5	1.4	3.4	1.4
	Sixth	3.7	1.3	3.6	1.3	3.7	1.3
	Both	3.5	1.4	3.6	1.4	3.5	1.4
7. Reaction to failure (5)	Fifth	3.2	1.3	3.3	1.3	3.2	1.3
	Sixth	3.5	1.3	3.5	1.3	3.5	1.3
	Both	3.4	1.3	3.4	1.3	3.4	1.3
8. Withdrawal from group (6)	Fifth	4.6	1.5	4.6	1.6	4.6	1.6
	Sixth	4.6	1.5	4.7	1.4	4.7	1.5
	Both	4.6	1.5	4.6	1.6	4.6	1.6

---

[a] Characteristics 6, 16, and 17 were not included for scoring; see Appendix C. Number in parentheses indicates highest possible score.

[b] Fifth grade: 208 males, 154 females, 362 total. Sixth grade: 222 males, 169 females, 391 total. Both grades: 430 males, 323 females, 753 total.

TABLE 17 (Continued)

TBRS Characteristic	Grade	Male		Female		Both	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
9. Compliance (5)	Fifth	3.3	1.2	3.1	1.2	3.2	1.2
	Sixth	3.4	1.3	3.2	1.2	3.3	1.3
	Both	3.4	1.3	3.2	1.2	3.3	1.2
10. Use of capacity (4)	Fifth	2.6	1.0	2.9	1.0	2.7	1.0
	Sixth	2.8	1.0	2.8	1.0	2.8	1.0
	Both	2.7	1.0	2.9	1.0	2.8	1.0
11. Emotional sensitivity (4)	Fifth	3.0	0.9	2.7	0.9	2.8	0.9
	Sixth	2.9	1.0	2.9	0.9	2.9	1.0
	Both	3.0	1.0	2.8	0.9	2.9	1.0
12. Responsiveness to emotional stimulation (4) . .	Fifth	2.7	1.2	2.7	1.1	2.7	1.2
	Sixth	2.7	1.2	2.9	1.1	2.8	1.2
	Both	2.7	1.2	2.8	1.1	2.7	1.2
13. Moodiness (4)	Fifth	3.0	1.1	2.8	1.2	2.9	1.2
	Sixth	3.1	1.0	3.1	1.1	3.1	1.1
	Both	3.0	1.1	2.9	1.2	3.0	1.2
14. Cooperativeness (5)	Fifth	3.5	1.3	3.7	1.3	3.6	1.3
	Sixth	3.7	1.4	3.8	1.3	3.7	1.4
	Both	3.6	1.4	3.7	1.3	3.7	1.4
15. Popularity (4)	Fifth	2.7	0.8	2.7	0.7	2.7	0.8
	Sixth	2.8	0.7	2.8	0.6	2.8	0.6
	Both	2.7	0.8	2.8	0.6	2.7	0.7
18. Judgment (2)	Fifth	1.6	0.5	1.7	0.5	1.7	0.5
	Sixth	1.7	0.5	1.8	0.4	1.7	0.4
	Both	1.7	0.5	1.7	0.4	1.7	0.4
Total (66.0)	Fifth	46.6	8.2	46.8	8.6	46.7	8.4
	Sixth	48.5	8.6	49.2	8.2	48.9	8.4
	Both	47.6	8.4	48.0	8.5	47.8	8.4

Tests of the Hypotheses

The first research hypothesis was stated in the following form:

1. The degree of visual acuity of preadolescent partially seeing children was inversely related to their level of adjustment.

If the hypothesis were to have been supported it would have been necessary to show that better adjustment was associated with greater visual impairment at the 5 percent level of confidence. Put in another way, the hypothesis would have been supported if the partially seeing children with near-normal vision were found to have been less well adjusted than those children with more severe vision losses.

The research hypothesis was tested in two ways. The first test was a correlation between visual acuity and total scores on the TBRS. High scores on the TBRS were indicative of good adjustment. Low scores on the visual acuity rating scale were indicative of near-normal vision. Therefore, a significant positive correlation would be required to support the hypothesis. The correlations obtained and their significance are as follows: (1) r between far-point visual acuity and total TBRS scores = .024, with an N of 725 cases

--not significant at the 5 percent level of confidence; (2) r between near-point visual acuity and total TBRS scores = -.044, with an N of 342 cases--not significant at the 5 percent level of confidence.

A second and different test of the above research hypothesis was made. In the second test the information supplied by teachers on the Personal Data Form about the social and emotional adjustment of their pupils was used as the adjustment variable. Teachers had indicated that 90 of their pupils were socially maladjusted to a significant extent and that 663 were not. Correlations were computed between presence or absence of social maladjustment and degree of visual acuity. For far-point visual acuity the r was -.038 (N=725). For near-point visual acuity the r was .082 (N=342). Neither correlation was significant at the 5 percent level of confidence.

Also, teachers had indicated that 153 of their pupils were emotionally maladjusted and that 500 were not. Correlations were computed between presence or absence of emotional maladjustment and degree of visual acuity. Those correlations were r = -.028 (N=725) and r = .079 (N=342), respectively, for far-point and near-point visual acuity. Neither was significant at the 5 percent level of confidence. The reduced N's on which the correlations are based result from the fact that some teachers did not report visual acuity data. Because the research hypothesis was directional, one-tailed tests of significance were used.

The hypothesis was not supported. Degree of visual acuity was found to be unrelated to adjustment, whether adjustment was measured by the TBRS total score or by teacher judgment on the presence or absence of either social maladjustment or emotional maladjustment in their partially sighted pupils. The absence of significant relationship held for both near-point and far-point visual acuity.

The second research hypothesis was stated in the following form:

2. No significant relationships existed between the specific behavior characteristics as shown on the adjustment scale and the visual acuity of partially seeing children.

If the hypothesis were to have been supported it would have been necessary to show that none of the fifteen individual items which make up the TBRS would be either positively or negatively related to measures of either degree of far-point or near-point visual acuity at the 5 percent level of confidence. Therefore, the test of the hypothesis called for the calculation of thirty correlation coefficients, fifteen between individual TBRS items and far-point acuity ratings and fifteen between individual TBRS items and near-point acuity ratings.

The correlations are shown in Table 18, and their significance levels are indicated. Too few were significant at the 5 percent level of confidence, with the result that the research hypothesis was supported.

Additional Questions Investigated

The focus of this investigation was on the hypotheses regarding possible relationships between degree of visual acuity and level of adjustment. Not far from that focus, however, were a number of other questions having to do with the adjustment of partially seeing children. Those questions were not put in the form of hypotheses. At this point, they need to be raised simply as questions of information, for they have to do with matters which have not been investigated at all heretofore within a sizable population limited to partially seeing children. It seemed possible that some of the responses to the questions might give rise to hypotheses which could be investigated in subsequent research. That would depend, of course, upon the nature of the responses to the questions.

TABLE 18

CORRELATIONS OF TBRS ITEMS AND VISUAL ACUITY RATINGS

TBRS Item	Far-Point Acuity		Near-Point Acuity	
	No.	r	No.	r
1. Dependence on others	725	.008	342	-.032
2. Assertiveness	725	-.012	342	-.045
3. Tendency to worry	725	.017	342	.021
4. Criticism of others	725	.005	342	.013
5. Reaction to criticism	725	.009	342	-.035
7. Reaction to failure	725	-.011	342	-.079
8. Withdrawal from group	725	-.030	342	-.054
9. Compliance	725	.091*	342	.024
10. Use of capacity	725	.029	342	.049
11. Emotional sensitivity	725	.012	342	.034
12. Responsiveness to emotional stimulation	725	.020	342	-.105*
13. Moodiness	725	.026	342	-.051
14. Cooperativeness	725	.021	342	.041
15. Popularity	725	-.057	342	-.114*
18. Judgment	725	.033	342	-.060

*p = .05 level of confidence (r ≧ .075 for far point and r ≧ .091 for near point required).

All of the questions follow the same pattern: Were there relationships between adjustment and certain characteristics[1] of fifth- and sixth-grade partially seeing children? Adjustment was defined as the total score on the TBRS.

In the following sections all ten of the characteristics are examined for possible relationships to adjustment.

Sex

There were 430 boys and 323 girls in the fifth- and sixth-grade partially seeing population. Using sex as one variable and total TBRS score as the other, a test for the significance of the difference between means was made. The .4 difference between means was not found to be significant. If there were adjustment differences between boys and girls in the age range of partially seeing children in this sample they are not discernible from the total TBRS scores.

Grade

There seemed to be a fairly strong tendency for adjustment to be positively associated with grade placement in school, in so far as fifth- and sixth-grade partially seeing children were concerned. For the 362 fifth-graders and the 391 sixth-graders on whom data were available there was a correlation of .704 (significant at beyond the 1 percent level) between grade placement and total TBRS scores. This finding suggested that the TBRS may be made up of items that are susceptible to improvement through what children learn in the typical school curriculum.

---

[1] The characteristics were: (1) sex, (2) grade, (3) age, (4) over-ageness, (5) residence, (6) home-school relationships, (7) type of school program, (8) years in special education, (9) etiology of visual disability, (10) age at onset of vision disability.

Age

There were 753 children for whom both chronological age and TBRS scores were available. While the children were all in grades five or six, the range of chronological ages was considerably more than normally expected. In fact, a range of 4 years and 9 months was found (reported in Table 2). The correlation coefficient between age in months and total TBRS scores proved to be .098, which was significant at the 5 percent level of confidence. The correlation suggested a tendency for the younger partially seeing children to be less well adjusted than the older children in the ten to fifteen year age range. This was particularly singular in view of the fact that the older partially seeing children were substantially over-age for grade (reported in Table 2), and over-ageness for grade among children in regular school programs is often thought to be associated with increased social and emotional maladjustment.

The slight negative correlation of adjustment with age was not necessarily inconsistent with the finding in the preceding section that adjustment had a strong positive association with grade placement. Assuming that improvements in the adjustment behaviors of the kind used in the TBRS were fostered through the school curriculum, it was noted that the younger children in both grades were those closest to their correct grade placements, thus demonstrating higher aptitude for school learning.

Over-ageness

It was pointed out in the description of findings on age and adjustment that it was not uncommon to hear the opinion expressed that maladjustment tends to be more frequent among those children who are over-age for grade than among those who are at a normal grade for age. That opinion may have been due to the belief that falling behind in school was the kind of public failure which put great pressure on the child to compensate in some way to regain the favor of his peers. And some of the consequent efforts to compensate may have produced behavior which was maladaptive in the eyes of society.

Whether the above rationale is really the basis of the finding could not be determined within the scope of this study. It is true, however, that a slight tendency in that direction was found among the fifth-grade partially seeing children, and the evidence for the tendency was statistically significant at the 1 percent level of confidence.

An analysis of variance on the normal-aged (N=4) and the over-aged (N=346) fifth-grade children with respect to total TBRS scores produced an F-ratio of 4.9292, significant beyond the 1 percent level of confidence. In short, children who were of normal age for grade earned significantly higher (better) adjustment scores. The actual difference in mean scores was 10.7. A correlation of -.118 between age and TBRS total score for children in the fifth grade was significant at the 1 percent level of confidence. Within the fifth grade, therefore, there was a slight but significant tendency for the younger children to have higher (better) adjustment scores on the TBRS.

The same analysis procedures were carried out on the sixth grade. The direction of the findings was the same, but neither the F-ratio (.1833) nor the correlation (-.022) was significant.

Residence

Reference to Table 3 shows the number and proportion of children who lived at home with their natural parents, with adoptive parents, and in other settings. Home conditions have long been considered important in determining the adjustment of children in general. Such an effect appeared to have been felt with partially seeing children, also. Using living with both natural parents or not as one variable and total TBRS score as the other variable, a correlation of .113 was found for the 751 children on whom residence records were available. The correlation, though not high, was positive and was significant at the 1 percent level of confidence. Children who lived at home with their natural parents showed a slight tendency to be better adjusted than others.

It is important to note that the opposite was true for partially seeing children who lived with relatives other than their natural parents. For such children a negative correlation (r = -.102) was found, significant at the 1 percent level of confidence, indicating that there was a slight tendency for residence with relatives other than natural parents to be accompanied by less satisfactory adjustment than other arrangements.

Residence in other settings showed no significant relationship to adjustment.

Home-school relationships

The teachers indicated the degree of home-school cooperation they experienced for each of their pupils. The degrees of cooperation were very cooperative, mildly cooperative, or uncooperative, as indicated in Table 4.

Correlations were done between each degree of cooperation and TBRS total scores. A modest degree of association was found in each case, and the association was positive (r = .235) for very cooperative homes, negative (r = -.184) for mildly cooperative homes, and negative (r = -.151) for uncooperative homes. With an N of 719, all three correlations were significant at better than the 1 percent level of confidence.

Better adjustment in the children seemed to have been associated with a high level of home-school cooperation. The reverse was true with mildly cooperative or uncooperative homes. The association was not a strong one, as was indicated by the relatively low magnitudes of the correlations. Consideration has been made that the ratings of pupil adjustment on the TBRS and the ratings of home-school cooperation were made by the same persons, the teachers. The ratings were not closely associated, however, since they were ostensibly for different purposes and were separated by approximately three months in time.

Type of school program

The three special education program types which included most children were the itinerant (N=115), the resource room (N=215), and the special class (N=355). An analysis of variance was used to determine if there were significant differences in TBRS total scores connected with the types of programs in which children were enrolled. An F-ratio of 4.408 was obtained, significant at the 5 percent level of confidence. To assess the magnitude of the relationships correlations were obtained between TBRS total scores and presence or nonpresence in each type of special education program. The significant F-ratio seemed attributable to a small positive correlation (r = .098) between adjustment and placement in the itinerant program type and small negative correlation (r = -.075) between adjustment and placement in the resource room program type. Each correlation was significant at the 5 percent level of confidence. The correlation between adjustment scores and placement in the special class program type was r = .006, not significant at any level.

There appears to have been a very slight tendency for better adjustment to be associated with children in itinerant programs, and poorer with resource room programs.

Years in special education

It might have been presumed that longer enrollment in special education programs would have had more salutory effects on the adjustment of partially seeing children. Thus, it might have been expected that those partially seeing children who had the benefit of more years in a special education program would prove to have been the better adjusted. To study that possibility, a correlation was calculated between years enrolled in special education and total TBRS scores. The result ($r = -.050$) was a finding that number of years in special education was not significantly related to level of adjustment. It was possible, of course, that for a number of the over-age children the extended tenure in special education was partly a function of school failure and grade repetition. If this were so, the presumed beneficial effect on adjustment may have been offset by the negative effect of over-ageness.

Etiology of visual disability

Three of the most frequent eye conditions which were found among partially seeing children were myopia, hyperopia, and retrolental fibroplasia. All are organic conditions. The first, myopia, has commonly been called nearsightedness. It results from an abnormal elongation of the eyeball during its development and is corrected by a convex lens which reduces the focal distance, cooperating in that function with the lens in the eye. Hyperopia is just the opposite, being corrected by a concave lens which increases the focal distance. Both of these conditions require fairly heavy, noticeable lenses. It has sometimes been thought that the relatively unusual lenses attract attention and result in a cosmetic problem; if present, this has presumed to foster adjustment difficulties for the wearer.

On the other hand, retrolental fibroplasia is not a developmental anomaly. It is a failure of full development of the retina which has been most commonly associated with premature infants who were allowed too much oxygen while being incubated immediately after birth. The excess of oxygen modified the normal metabolic process to a sufficient degree to sometimes cause improper fixture of the retina to its supporting structures and to encourage the development of fibrous matter or scar tissue overlays. While not observable externally, it markedly has decreased vision, sometimes resulting in total blindness. It has sometimes been assumed that parents, having suffered successfully (or so they thought) through a premature birth experience and then being confronted with a visually limited child because of an unforeseen error in medical management of the case, would be embittered. The consequence, it was presumed, would be one of a variety of kinds of faulty child-rearing which could have easily ended with the youngster showing substantial maladjustment.

None of the above suppositions have been investigated objectively with partially seeing children so far as the available literature indicated. In fact, the notions expressed above have not been found in writing even as opinions, though they have been discussed among professionally concerned persons in the investigator's experience.

In order to obtain information on the possibility that myopia, hyperopia, or retrolental fibroplasia might have been associated with maladjustment, correlations were computed. The presence or absence of each of three conditions was one variable and the TBRS total score was the other. For myopia the correlation was .015 (N with myopia = 268). For hyperopia the correlation was .015 (N with hyperopia = 161). For retrolental fibroplasia the correlation was .047 (N with retrolental fibroplasia = 100). The total N of the sample was 753. None of the correlations were significantly different from zero.

To the extent that the total sample was representative, no support was found for the notion that certain etiologies (as represented by the three studied) are more likely to be associated with adjustment problems than others.

Age at onset of vision disability

On an *a priori* basis it might have been proposed that the age at onset of a vision disability would have an important bearing on adjustment. One argument might have gone to the point that onset at birth or in very early childhood not only gave the individual a long time to adapt to the disability but also allowed him the advantage of going through the important developmental period of childhood learning to live with the handicap. Another and opposite argument might have pointed out that onset later in life, while perhaps shocking, would have given the individual the benefit of a background of a normally seeing early childhood in which to learn significant concepts without the disadvantage of a handicap and allow the shock of acquiring a disability to have been absorbed by a more mature organism.

Such differences of opinion were apparently unnecessary so far as the data from this investigation could be generalized. The correlation between age at onset and total TBRS score ($r = -.020$) was nonsignificant both as to size and confidence level. In the population of this study there was no relationship between age at onset of disability and adjustment.

Conclusions

Hypotheses Investigated

Hypothesis 1

The first hypothesis of the study postulated that the degree of visual acuity of the preadolescent partially seeing children would be inversely related to their level of adjustment. The hypothesis was not supported by the results, as tests of the hypothesis showed no significant relationships.

Adjustment as measured by the Teachers' Behavior Rating Scale was not inversely related to the reported visual acuity measurements of the fifth- and sixth-grade subjects in the sample population. No significant relationships existed between the subjects' reported visual acuity measurements and the participating teachers' indications of social and emotional maladjustment.

Hypothesis 2

The second hypothesis of the study postulated that no significant relationships would exist between the specific behavior characteristics as were shown on the adjustment scale and the visual acuity of partially seeing children. The research hypothesis was supported as the tests showed too few significant relationships at the 5 percent level of confidence. The reported visual acuity measurements for this sample population were not significantly related to any of the fifteen specific behavior characteristics as were indicated on the Teachers' Behavior Rating Scale.

Questions Investigated

Beyond the hypotheses, ten questions were investigated. The questions all followed the same format: Were there relationships between adjustment and certain characteristics[1] of fifth- and sixth-grade partially seeing children? The conclusions to the questions follow.

Sex of subjects

No significant relationships existed between sex and adjustment for fifth- and sixth-grade partially seeing subjects in this sample population.

---

[1] The characteristics were: (1) sex, (2) grade, (3) age, (4) over-ageness, (5) residence, (6) home-school relationships, (7) type of school program, (8) years in special education, (9) etiology of visual disability, (10) age at onset of vision disability.

Grade in school

There was a fairly strong tendency for adjustment to have been positively associated with grade placement in school, so far as fifth- and sixth-grade subjects from this sample population were concerned.

Age

There appeared to have been a slight tendency for the younger partially seeing children to have been less well adjusted than the older children in the sample population.

Over-ageness

Within the fifth grade there was a slight but significant tendency for the younger children to have had higher (better) adjustment scores on the TBRS. Over-ageness for the sixth-grade subjects in the sample population was not significantly related to the adjustment score on the TBRS.

Residence of the children

Subjects who lived at home with both natural parents showed a slight tendency to be better adjusted than others, and in this study the opposite was true for the partially seeing subjects who lived with other relatives.

Home-school cooperation

Better adjustment in the partially seeing children of the sample population was associated to a modest degree with high level of cooperation between the home and school. The reverse was true for mildly cooperative and uncooperative homes of subjects in this sample population.

Type of special education program

A very slight tendency for better adjustment appeared to have been associated with children in itinerant programs and poorer adjustment to have been associated with children in resource room programs.

Years in special education

Level of adjustment was not significantly related to the number of years fifth- and sixth-grade children had been enrolled in special education programs.

Etiologies of disabilities

No support was found for the supposition that certain etiologies (as represented by myopia, hyperopia, and retrolental fibroplasia, the three most prevalent in this sample) were more likely to be associated with adjustment problems than others listed in this study.

Age at onset of visual disability

In the partially seeing sample population of this study, there was no relationship between age at onset of disability and adjustment.

CHAPTER IV

LIMITATIONS, RECAPITULATIONS, IMPLICATIONS, AND RECOMMENDATIONS

A brief review of the limitations of the study is necessary at this point. The discussion of the results and conclusions, recommendations, and implications is set in the context of the limitations, and comments made are intended for interpretation in that light.

Limitations of the Study

During the course of the report a number of factors have been pointed out which limit the interpretations made from the findings and results. The major limitations were:

1. The representativeness of the sample of fifth- and sixth-grade partially seeing children could not be established.
2. The meaning of "adjustment" has been confined to those items measured by the TBRS, unless otherwise indicated.
3. The accuracy of the measure of "adjustment" was a function of the competence of the teachers to make the observations required by the TBRS.

4. Data about the pupils such as age, residence, visual acuity, and the like depended upon the adequacy of the school records and related material to which teachers had access.
5. The findings were directly applicable only to the fifth- and sixth-grade population used.
6. The study was essentially a descriptive one. Any relationships found could not be construed as implying cause-and-effect conditions.

Recapitulation and Implications

The conclusion was reached that adjustment and degree of visual acuity are not inversely related. And the conclusion can be extended, for there was no relationship, inverse or otherwise, which could be discerned between individual items on the adjustment scale and degree of visual acuity. Three questions, then, needed to be asked about that conclusion: First, how certain could one be about it? Second, what did it mean about the adjustment of partially seeing children in general? Third, what did it mean for special educators?

For the first question, the certainty about the conclusion depended in part on the validity and reliability of the measures employed. On the face of it, the TBRS had validity. The items which made up the scale were clearly examples of the kinds of behavior which made up overt adjustment. As to the scale's reliability, that has been shown to be substantial (see Appendix D). Also, the matter of certainty was dependent partly upon the adequacy of the sample of partially seeing children. The uncertainty about that has already been noted. It can be said, however, that the sample was the largest and most geographically diverse ever assembled in two contiguous grades. The accuracy of the visual acuity data, too, was a factor influencing how certain it is possible to be. All that could be said about that was that it was reported from the most recent school records by professionally competent persons.

Taking the above factors into account, it was the best judgment of the investigator that reasonable confidence could be felt in the conclusion. It would be advisable, certainly, to replicate the study on a different population of partially seeing children to check the accuracy of the conclusion. Pending that, however, the conclusion from this study forms the best basis for decision on the matter.

If it were accepted, what did the conclusion mean about the adjustment of partially seeing children in general? First, it meant that it would be advisable to look beyond the degree of visual acuity for explanations for maladjustments found in fifth- and sixth-grade partially seeing children. Though not so strongly, it is suggested that a comparable study for such children above and below the fifth- and sixth-grade levels is needed, for fourth-graders are much like fifth-graders, and seventh-graders are much like sixth-graders.

As to what the conclusions meant for special educators, it raised the question of what educational significance degree of visual acuity had, if any, for the affective or adjustment aspects of curriculum. What should have been the substance of the counseling and teaching which was intended to have acquainted the child more and helped him to adjust better to the reality of impaired vision in terms of limited visual acuity? What ever was done in that part of the child's school program, it could be assumed that there was no inherent and constant relationship which related the amount and kind of counseling needed with children having varying degrees of remaining visual acuity.

Among the ten questions raised there was only one, the matter of grade placement and adjustment, which revealed a relationship that seemed to merit a full discussion of its implications. For the others, there were findings about the correlations with adjustment for sex, years in special education program, type or etiology or disability, and age at onset of disability which would discourage attempts to have probed further for educationally fruitful material.

So far as over-ageness, residence of the children, home-school cooperation, and type of special education program were concerned there were hints at educationally significant data which might have yielded valuable results if they had been pursued. The most crucial could well have been the combination of underachievement and over-ageness. There seemed no good reason to account for it except that it might have been the partial result of low expectation for achievement after school admission. The present medical attitude has been that full use of vision, even severely defective vision, has not been harmful to young children. The evidence from this study supported the idea that partially seeing children were not different in learning capability from children in general. The underachievement of fifth- and sixth-grade partially seeing children was apparent from the reports of their teachers and their over-ageness for grade. The implications drawn from the above points were that higher academic goals should have been set for these children from the outset. More intensive motivation and teaching methods should have been directed at reaching higher achievement goals. With an increased emphasis on achieving the expectancy levels of children who were not visually handicapped, perhaps the underachievement and over-ageness could be eliminated or markedly reduced in the partially seeing children now entering the schools. Perhaps intensive remedial instruction could retrieve, too, those who are now achieving so markedly below their evident potentialities. All indications from this study favor making such an attempt.

Returning to the relationship between grade placement and adjustment, the tests showed there was a correlation of .70 between the two. Children in sixth grade were significantly better adjusted than children in fifth grade, as adjustment was measured by the TBRS. One of the often emphasized objectives of education for all children and particularly for partially seeing children has been improvement in adjustment both to self and to society. The evidence from this investigation suggested the implication that significant progress was being made toward that objective. It would have been going far beyond the evidence to have attributed the advance in adjustment from fifth to sixth grade to the special education curriculum and its teachers. But the finding suggested that further research, a research of a controlled, experimental kind, should be directed to that point. If hard evidence could be obtained about teaching methods and materials and curriculum content which contribute to the improvement of adjustment not only would partially seeing children be benefited, but there would be a good likelihood that the findings, as has been the case with other findings about the education of the partially seeing, could be passed on with profit to the education of all children, exceptional and otherwise.

Recommendations

The following recommendations seemed appropriate in the light of what has been revealed by the study.

1. Study of the adjustment problems among partially seeing children should be continued. Such studies should look beyond visual acuity for causation or explanatory factors.
2. Studies of adjustment problems should be extended to other ages and grade levels, both up and down.
3. Teachers and others counseling with partially seeing children need not assume that the degree of visual acuity or the type of visual disability carries with it specific adjustment problems.
4. Social agencies responsible for child placement may find it advisable to investigate further the problem of placing the child with a relative rather than in an unrelated foster home, when it is not feasible to reside with natural parents.
5. Teachers should be encouraged to continue to foster high cooperation between home and school, since that was

positively related to improved adjustment among the children.

6. It would be advisable to study educational placement practices to determine if the child's degree of adjustment, good to poor, might be a significant determining factor in assignment to itinerant, resource, or special class programs, as opposed to the child's independence in study or degree of achievement in school subjects.
7. Further investigation is needed to account for the finding of a marked difference in adjustment in relation to the grade levels in which the children were placed. Such a study might reveal imperative changes needed in curriculum planning to incorporate remedial teaching.
8. It is advisable to arrange for more complete medical reports to teachers, since many have little or no information on the eye conditions of their pupils.
9. Admission policies should be reviewed, in those instances where delayed admission for partially seeing children is practiced. It would be advisable to study such policies in terms of early childhood needs.
10. Teacher education programs might devote more time to instruction in remedial teaching techniques, fostering of

favorable home-school relationships, and fuller understanding of the dynamics of underachievement.

11. Special classes, itinerant programs, and resource rooms should be organized and developed with optimum mental health resources so the organizational pattern for instruction will not result in disadvantage to any child.

APPENDIXES

APPENDIX A

PERSONAL PUPIL DATA SHEET

TO THE TEACHER: This data sheet should be completed for each partially seeing child you have enrolled in 5th or 6th grade. Place the response to each item in the column at the right, marked response. Where possible simply indicate the response by a number in the response column.

The data you furnish will be kept confidential. If you are uncertain as to what data is requested for any item, write for further interpretation to the project office.

1. Teacher Information: RESPONSE COLUMN

Last Name ____________________

First Name ____________________

School Address of Teacher ____________________

____
(Name of School)

____
(Number, Street)

____
(City, State)

2. Pupil Information:

Last Name ____________________

First Name ____________________

Birthdate ____________________
(Month--Day--Year)

RESPONSE COLUMN

Name of School ____________________

School Address ____________________
(Number, Street)

____
(City, State)

3. Child resides with (indicate by number): ____________________
    1. Natural parents
    2. Parents by adoption
    3. Relatives ____________________ (Specify)
    4. Foster home
    5. Other ____________________ (Specify)

4. The relationship between the child's home and school is (indicate by number): ____________________
    1. Very cooperative
    2. Mildly cooperative
    3. Uncooperative
    4. Unknown

5. Educational Program Information (indicate by number): ____________________
    1. Full-time special class
    2. Cooperative special class
    3. Resource room
    4. Itinerant teacher
    5. Teacher consultant

6. Indicate number of years the child has been in a Special Education Program, to the best of your knowledge. ____________________

7. Record the most recent I.Q. score on the pupil in the response column. ____________________

RESPONSE COLUMN

8. Record the year the most recent intelligence test was given in the response column. ____________________

9. Indicate (by number) the most recent intelligence test given: ____________________
   1. Stanford-Binet
   2. Wechsler
   3. Otis
   4. Kuhlman-Anderson
   5. California Mental Maturity
   6. Lorge-Thorndike
   7. Columbia Mental Maturity
   8. Other ____________________ (Specify by Title)

10. Indicate the grade in which child is currently enrolled. ____________________

11. Regardless of grade in which the child is enrolled presently, at what grade level is he working in each of the following curricular areas? Indicate to the nearest grade:

Reading ____________________

Spelling ____________________

Arithmetic ____________________

Science ____________________

Social Studies ____________________

Music ____________________

Art ____________________

Physical Education ____________________

RESPONSE COLUMN

12. In terms of teaching this pupil, which of the following visual disabilities causes the greatest educational problems?
    1. Fatigue ____________________
    2. Cannot see complete words
    3. Seating changes needed due to peripheral vision
    4. Decrease of normal lighting required ____________________
    5. Increase of normal lighting required
    6. Rest periods required
    7. Physical activity is restricted
    8. Eye use is restricted
    9. Does not have distance vision, cannot see blackboard, movies; to play in physical education games, to cross streets
    10. Other ______________________ (Please describe)

13. Visual acuity with correction:

Near Point Left 14/__________________

Right 14/__________________

Far Point Left 20/__________________

Right 20/__________________

14. Degrees of visual field:

Right (state degrees) __________________

Left (state degrees) __________________

RESPONSE COLUMN

15. Visual acuity certified by (indicate by number): ____________________
    1. Physician (other than ophthalmologist)
    2. Ophthalmologist
    3. Optometrist
    4. Nurse
    5. Other ______________________ (Specify)

16. Age at known onset of disability ____________________

17. Diagnosis of visual problem(s).
    Check the condition or conditions:

	Right Eye	Left Eye	Both Eyes
Albinism			
Amblyopia			
Astigmatism, Hyperopic			
Astigmatism, Mixed			
Astigmatism, Myopic			
Cataract			
Choriorentinitis			
Corneal Scars			
Dislocated Lens			
Enucleation			
Glaucoma			
Hyperopia			
Keratitis			
Muscle Imbalance			
Myopia			
Nystagmus			
Optic Atrophy			
Ptosis			
Retinal Degeneration			
Retrolental Fibroplasia			
Retinal Detachment			
Retinitus Pigmentosa			
Other ______________________ (Specify)			
Not known to teacher			

RESPONSE COLUMN

18. Is disability (indicate by number): ________________
    1. Progressive
    2. Stable
    3. Do not know

19. Does child have other handicaps? (indicate by number): ________________
    1. Hearing
    2. Speech
    3. Orthopedic
    4. Intellectual
    5. Health ________________
       (Specify nature of handicap)
    6. Social
    7. Emotional
    8. Cosmetic
    9. Other ________________
       (Specify)

20. Which visual or instructional aids are used by the child? (indicate by number)(s): ________________
    1. Glasses
    2. Low vision aid ________________
       (Briefly describe)
    3. Magnifier
    4. 24 point type
    5. 18 point type
    6. Smaller than 18 point type
    7. Standard printing
    8. Paper guide
    9. Pencils or pointers
    10. Braille
    11. Other ________________
        (Specify)

21. Other descriptive information you may wish to include:
(Please feel free to tell us of any condition or situations you have observed which might have significant effect on the educational practices you use with the child.)

APPENDIX B

INSTRUCTIONS TO TEACHERS

MEMO

To: Participating Teachers

From: Project Staff, University of Pittsburgh

The enclosed rating scale is being sent to all the teachers cooperating in the project "School Achievement and Effect of Type Size on Reading in Visually Handicapped Children." We believe this scale will provide a new dimension of our knowledge of partially seeing children.

We are, therefore, asking your cooperation in completing the scale for each of the children presently involved in the testing program. We realize this entails an expenditure of 10 to 15 minutes per child, and greatly appreciate your efforts. If you feel this is too much to do and prefer not to return this scale, we shall understand your feelings.

Your cooperation on this project has been most gratifying. We are indebted to you for the valuable time you have so generously given and for the sustained interest you have shown in the project. The comparative material from this scale will be sent to you when the results have been processed.

Thank you again for your continued participation. Address correspondence relative to the enclosed scale to:

Ralph L. Peabody
Department of Special Education and Rehabilitation
519 Schenley Hall
University of Pittsburgh
Pittsburgh, Pennsylvania 15213

Phone, 621-3500, Ext. 529, Area Code 412

APPENDIX C

TEACHERS' BEHAVIOR RATING SCALE[1]

Student's Name: ______________________________

Date: ________ Grade: ________ City: ______________________

State: ______________________ Teacher: ______________________

The following pages contain a number of characteristics which can be said to describe the behavior of students. A different characteristic appears on each page. Under each description are a number of statements representing various degrees of that characteristic. Please read each of the descriptions and the statements below it very carefully.

You are being asked to rate the behavior of a student on each of these characteristics of behavior. When comparisons of behavior are indicated, compare the child's individual behavior to that of other partially seeing children and not to the behavior of physically normal children. Do this in the following way:

In rating the student, first read the characteristic, its description, and the statement under it. Then decide, to the best of your knowledge of that student, which one of the statements best describes the behavior of that student. Place a check mark on the line to the left of that statement. There should be only one check mark on a page. Do this for each of the characteristics.

Your cooperation is sincerely appreciated. Thank you.

---

[1] Emory L. Cowen et al., Adjustment to Visual Disability in Adolescence (New York: American Foundation for the Blind, Inc., 1961), pp. 193-201.

TEACHERS' BEHAVIOR RATING SCALE[1]

I

CHARACTERISTIC: DEPENDENCE ON OTHERS.

DESCRIPTION: TENDENCY TO DEPEND ON OTHERS, EITHER ADULTS OR OTHER STUDENTS FOR ATTENTION, APPROVAL, SUPPORT, AND/OR AFFECTION.

DOES HE CONTINUALLY DEMAND ATTENTION: REQUIRING THE TEACHER'S HELP AND ENCOURAGEMENT BEFORE HE CAN ACCOMPLISH ANYTHING, OR DOES HE ENJOY HIS OWN ACCOMPLISHMENTS WITHOUT DEMANDING THAT OTHERS ADMIRE THEM, ASKING FOR HELP ONLY WHEN HE HAS TRIED UNSUCCESSFULLY TO DO A DIFFICULT TASK HIMSELF?

	Items:	Adjustment Weight
____	Demands attention continually; works only under teacher's guidance. Asks for unnecessary help.	1
____	Prefers to work in a group where he is the center of attention. Is not satisfied with his accomplishments until they have been approved or admired by others.	3
____	Is self-reliant and self-sufficient. Is glad to share his accomplishments with others but does not seem to need their approval for his own enjoyment. Prefers to solve his own problems without asking for help, but accepts it when he cannot solve them alone.	5
____	Demands attention and admiration only when he has done something which he considers better than usual. Asks for help only when needed but asks freely when in difficulty.	4
____	Rejects any attempt to give him help; refuses to respond to affection or approval of any kind. Completely independent, aggressively so.	2

---

[1] Permission to reproduce and use this scale for research purposes has been granted by the American Foundation for the Blind, Inc., and by Emory L. Cowen, Ph.D.

II

CHARACTERISTIC: ASSERTIVENESS.
DESCRIPTION: TENDENCY TO BE ASSERTIVE WITH OTHER STUDENTS.

DOES HE TEND TO GIVE IN WHEN ANOTHER STUDENT DEMANDS SOMETHING FROM HIM, EVEN WHEN HE HIMSELF IS OBVIOUSLY IN THE RIGHT, OR DOES HE STAND UP FOR HIS OWN RIGHTS, GIVE AS GOOD AS HE GETS, SHOWING LITTLE HESITATION IN APPROACHING OTHERS?

Items:		Adjustment Weight
____	Seems fearful only of the more aggressive students. Gives in when challenged when he is in the wrong.	3
____	Is fearful of other students. Gives in immediately when challenged.	1
____	Seems self-confident and adequate with other students. Stands up for his own rights vigorously; unhesitant in his relationships with others.	4
____	Seems unsure of himself with other students. Gives in when challenged, but only after token resistance.	2

III

CHARACTERISTIC: TENDENCY TO WORRY.
DESCRIPTION: TENDENCY TO WORRY ABOUT TRIVIAL OR NONEXISTENT PROBLEMS OR EVENTS.

IS THE STUDENT CONTINUALLY CONCERNED WITH MINOR PROBLEMS OR POSSIBLE FUTURE EVENTS TO SUCH AN EXTENT THAT HE HAS NO TIME OR ATTENTION FOR PROBLEMS OF A MORE CONSTRUCTIVE SORT, OR DOES HE TEND TO WORRY ONLY ABOUT MATTERS WHICH CONCERN HIM DIRECTLY AND WHICH ARE OF DIRECT IMPORTANCE TO HIS OWN WORK?

Items:	Adjustment Weight
____ Is concerned with trivial matters to a considerable extent but does not spend so much time worrying about them that he is unable to do some constructive work.	2.5
____ Adopts a happy-go-lucky attitude toward all matters, whether important or not. Unconcerned.	2.5
____ Tends to disregard or overlook small mistakes by himself and others. Spends little time discussing or worrying about them.	4
____ Worries incessantly about small, unimportant details. Is very concerned about the behavior of other students, commenting on anything which is not right about it.	1

IV

CHARACTERISTIC: CRITICISM OF OTHERS.
DESCRIPTION: TENDENCY TO BE OVERCRITICAL AND DEROGATORY TOWARDS OTHER STUDENTS.

DOES HE CONSTANTLY FIND FAULT WITH THEM, POINTING OUT THAT THEY DON'T KNOW HOW TO DO THIS OR THAT, OR DOES HE TEND TO BE UNCRITICAL OF THEM, ADMIRING THEIR ACHIEVEMENTS AND POINTING OUT GOOD POINTS? (HE MAY OR MAY NOT COMPARE HIMSELF TO THE OTHERS.)

	Items:	Adjustment Weight
____	Is friendly and uncritical. Praises others genuinely. Usually finds something good in what others might say or do. Never points out deficiencies.	4
____	Is friendly and tends to think well of others' work unless it is conspicuously bad. Stands up for students who are unjustly criticized.	5
____	Is derogatory and critical of other students. Makes fun of their work; points out deficiencies. Never has a good word for anyone.	1
____	Is critical of others but not derogatory. Judges others' work carefully and finds it good or bad according to some standard of his own.	3
____	Praises others immoderately, whether their work is good or not. Seeks acceptance and approval by flattery.	2

V

CHARACTERISTIC: REACTION TO CRITICISM.
DESCRIPTION: TENDENCY TO BE UPSET BY CRITICISM, BOTH JUST AND UNJUST.

DOES HE BECOME UPSET THE MINUTE ANYONE INDICATES THAT HIS WORK IS NOT EXCELLENT, OR THAT IT COULD HAVE BEEN BETTER, OR DOES HE TAKE CRITICISM PHILOSOPHICALLY, ACCEPTING MATTER-OF-FACTLY THAT WHICH SEEMS VALID AND DISREGARDING THE REST? HIS REACTION TO CRITICISM MAY TAKE THE FORM OF WITHDRAWAL: HE MAY SEEM HURT BY THE CRITICISM RATHER THAN GETTING ANGRY OR SULKY. RATE HIM ACCORDING TO THE INTENSITY OF THE DISTURBANCE RATHER THAN BY THE AMOUNT OF OVERT BEHAVIOR ELICITED.

Items:		Adjustment Weight
____	Appears to not recognize criticism as such; pays no attention to it. Acts as though it had not occurred.	2
____	Reacts strongly or violently to criticism. Flies off the handle when he, his actions, or his work is criticized, whether justly or unjustly. Sulks or refuses to continue the activity. Seems hurt; withdraws.	1
____	Reacts more strongly than seems called for. May become sulky, depressed, or appear hurt. Does not, however, go to pieces. May become defensive. Is able to take some small amount of criticism without becoming upset.	3
____	Accepts all criticism in good grace. Is able to weigh the criticism and accept or disregard it on its merits.	5
____	Becomes upset if the criticism is unusually prolonged or intense, but is able to accept a normal amount matter-of-factly.	4

VI[1]

CHARACTERISTIC: COMPLAINS OF PHYSICAL DISCOMFORT.
DESCRIPTION: TENDENCY TO COMPLAIN OF PHYSICAL DISCOMFORT.

DOES HE COMPLAIN OF HEADACHES, STOMACH-ACHES, ETC., OR DOES HE NEVER COMPLAIN OF SMALL ACHES AND PAINS BUT ONLY OF REAL INJURIES? THESE PAINS MAY SEEM TO HAVE NO BASIS IN ANY ACTUAL PHYSICAL AILMENT OR THEY MAY BE OF A VERY TRIVIAL NATURE.

Items:		Adjustment Weight
____	Complains constantly of one type of discomfort or another. Can't do certain things because of stomach-aches, for instance. Constantly asks to see nurse. Has many intangible ailments (headaches, etc.).	1
____	Is stoical, never concerned even when badly hurt. Denies obviously painful injuries.	2
____	Makes much of small injuries. Does not complain of less tangible aches and pains.	3
____	Concerned only when badly hurt. Soon forgets small injuries, or ones which do not interfere in any way with his activities. Continues to call attention to more serious injuries.	4
____	Never complains; never seems to feel ill or have his activities hampered by injury. Becomes upset only when painfully injured and forgets about it soon.	5

---

[1] Characteristic VI is not scored for adjustment.

VII

CHARACTERISTIC: REACTION TO FAILURE.
DESCRIPTION: TENDENCY TO BECOME UPSET WHEN FACED WITH A FAILURE SITUATION.

DOES HE BECOME VERY UPSET, MOROSE, OR DISCOURAGED WHEN SOME TASK WHICH HE IS DOING PROVES TOO DIFFICULT FOR HIM OR WHEN HE IS UNABLE TO GET WHAT HE WANTS, OR DOES HE TAKE FAILURE CALMLY, ACCEPTING DEFEAT IF THE TASK IS TOO DIFFICULT OR TRYING AGAIN IF IT STILL SEEMS POSSIBLE?

	Items:	Adjustment Weight
____	Becomes upset only at repeated failures or when he is in a situation in which he is intensely involved. Is able to take some failure with a matter-of-fact approach. Needs help only when faced with repeated failure.	4
____	Seems untouched by failure; does not seem to recognize it as such. Does not seem to face the situation.	2
____	Is upset and unhappy over failure but does not go to pieces. Becomes depressed and needs encouragement to continue the task.	3
____	Is calm and matter-of-fact about most failures. Sets to work again without any fuss. If faced with repeated failure, changes his method of attack on the problem.	5
____	Becomes frantic and disturbed when faced with failure. Withdraws and refuses to continue the task or bangs things around in exasperation.	1

VIII

CHARACTERISTIC: WITHDRAWAL FROM GROUP.

DESCRIPTION: TENDENCY TO WITHDRAW FROM THE GROUP. THIS IS INDICATED BY EVIDENT PREFERENCE FOR BEING ALONE.

DOES THE STUDENT SPEND MOST OF HIS TIME IN SOLITARY ACTIVITY, MAKING FEW, IF ANY, ATTEMPTS TO JOIN THE GROUP, OR DOES HE SPEND A GREAT DEAL OF TIME IN GROUP ACTIVITY?

	Items:	Adjustment Weight
____	Is never alone, even when his task is an individual one. Is an active member of any group he is in.	4
____	Is constantly by himself. Never is a member of the group. Has no close friends in the group.	1
____	Divides his time between group and solitary activities. Seems happy and at ease in either direction.	6
____	Joins in group activity whenever there is an opportunity unless deeply involved in some particularly absorbing task of his own.	5
____	Tends to spend most of his time alone or with one or two particular friends. Never takes part in social activities.	3
____	Is unhappy and at a loss unless a member of the group. Cannot concentrate on an individual task. Compulsive seeking of others and joining with them.	2

IX

CHARACTERISTIC: COMPLIANCE.
DESCRIPTION: TENDENCY TO COMPLY WHEN ASKED TO PERFORM SOME TASKS, WHETHER THIS IS A ROUTINE OR A SPECIAL TASK.

DOES HE DROP WHATEVER HE IS DOING AT THE MOMENT TO COMPLY IMMEDIATELY, OR DOES HE ALWAYS REFUSE TO DO WHAT IS ASKED AS A MATTER OF COURSE?

	Items:	Adjustment Weight
____	Complies readily with the demands made, only delaying when his own activities conflict. Never refuses completely.	4
____	Complies when his own task is not interfered with. Delays or refuses to comply when deeply involved in some other task.	5
____	Refuses or delays as a matter of course, whether the requested activity interferes with his own activity or not. Requires "handling" to be gotten through the requested activity without a squabble.	1
____	Balks at any demand which interferes with his own activity. Flatly refuses or delays; puts it off.	3
____	Complies immediately and without hesitation. Drops own activity at once, no matter how deeply involved. Never refuses.	2

X

CHARACTERISTIC: USE OF CAPACITY.
DESCRIPTION: TENDENCY NOT TO MAKE USE OF HIS CAPACITY.

DOES HE SEEM CAPABLE OF MUCH BETTER WORK THAN HE IS DOING, OR DOES HE SEEM TO BE TRYING TO DO MUCH BETTER WORK THAN HE IS CAPABLE OF, SETTING HIMSELF TOO HIGH STANDARDS, "BITING OFF MORE THAN HE CAN CHEW"?

Items:		Adjustment Weight
____	Seems capable of much better work than he does regularly. Does not seem to put much effort into his activities, nor to attempt anything that is at all challenging.	1.5
____	Works to capacity without much effort. Seems to enjoy doing his best. Accepts his limitations and does not try to exceed them.	4
____	Seems to be working up to capacity some of the time, but does much work that is below his real capacity.	3
____	Pushes himself far beyond his capacity. Does not face his limitations nor seem to be conscious of them. Attempts to do more than he is capable of. May or may not be tense or seem to fear failure.	1.5

XI

CHARACTERISTIC: EMOTIONAL SENSITIVITY.

DESCRIPTION: TENDENCY TO BECOME EMOTIONALLY AROUSED; SENSITIVITY TO EMOTIONAL STIMULATION, WHETHER THIS IS OF A POSITIVE OR NEGATIVE NATURE (ENJOYMENT OR DISPLEASURE).

DOES HE REACT READILY TO SITUATIONS WHICH ARE POTENTIALLY EXCITING, LAUGHING EASILY, CRYING EASILY, OR DOES HE NEVER SEEM TO REACT TO SUCH SITUATIONS, RARELY SHOWING ANY EMOTIONAL INVOLVEMENT? DO NOT CONSIDER HERE THE INTENSITY OF THE RESPONSE TO THE STIMULATION, BUT SIMPLY THE STUDENT'S TENDENCY TO RESPOND AT ALL.

Items:		Adjustment Weight
____	Never seems aware of emotional situations. Is never involved emotionally.	1
____	Responds only to intense stimulation.	2
____	Responds immediately to any sort of emotional situation. Is keenly aware of emotional nuances. Becomes emotionally involved in almost any situation (pleased, excited, etc.).	3
____	Becomes involved easily but is not continually responding.	4

XII

CHARACTERISTIC: RESPONSIVENESS TO EMOTIONAL STIMULATION.

DESCRIPTION: TENDENCY TO RESPOND TO EMOTIONAL SITUATIONS, REGARDLESS OF WHETHER HE RESPONDS FREQUENTLY OR RARELY.

WHEN HE DOES RESPOND TO AN EMOTIONAL SITUATION, DOES HE REACT STRONGLY, BECOMING VERY ELATED, VERY EXCITED, VERY DEPRESSED, OR VERY ANGRY, OR DOES HE SHOW ONLY A SUPERFICIAL REACTION, QUICKLY RECOVERING FROM LOSS OF TEMPER, SHOWING ONLY MILD PLEASURE, ETC.?

Items:		Adjustment Weight
____	Reacts strongly but does not become extremely upset or lose control.	3
____	Reacts to a degree that is characteristic for persons of his age.	4
____	Reacts violently when angered, excited, and/or pleased. Flies off the handle when angry.	1
____	Responds only mildly; never shows a great deal of enthusiasm. Emotions are of short duration and weak intensity.	2

XIII

CHARACTERISTIC: MOODINESS.
DESCRIPTION: STABILITY OF MOOD.

IS HE GENERALLY EVEN-TEMPERED AND STOLID OR IS HE SUBJECT TO WIDE AND/OR FREQUENT FLUCTUATIONS OF MOOD?

	Items:	Adjustment Weight
____	Varies between periods of extreme elation and depression. Frequent shifts of mood so that it is usually difficult to tell just how he is to be handled.	1
____	Has changes of mood but is happy or depressed only as the conditions warrant. Changes can be predicted from what has happened to him.	4
____	Is generally stolid and sometimes even stoic in temperament. Changes in mood are rare and degree of perceptible change is small.	2
____	Changes in mood are strong and frequent but not usually extreme. Sometimes difficult to predict how he will react to things.	3

XIV

CHARACTERISTIC: COOPERATIVENESS.
DESCRIPTION: TENDENCY TO BE WILLING TO COMPROMISE WITH OTHER STUDENTS AND COOPERATE IN ACTIVITIES.

DOES HE TEND TO PULL TOGETHER WITH THE REST OF THE GROUP AND IS AGREEABLE TO SUGGESTIONS OR DOES HE INSIST ON HIS OWN WAY OF DOING SOMETHING, CREATING IMPASSES IN THE ACTIVITY OF THE GROUP?

	Items:	Adjustment Weight
____	Insists that his ideas are the only ones worthy of serious consideration. Will not compromise a point at an impasse. Often heckles the group rather than attempting to help solve a problem.	1
____	Reluctant to yield to the suggestions of others but does so when sufficient pressure is brought to bear. May not continue to contribute toward the solution of the problem but does not obstruct the group.	2
____	Will drop his own ideas immediately if confronted by an opposing opinion or idea. Works with little or no regard for himself in participating in group activities.	3
____	Usually places the common goal of the group before his own personal ends. Engages in free "give and take" with the group but almost always favors the idea which will benefit the majority of the group.	5
____	Is occasionally "difficult," but often will work toward the common goal of the group.	4

XV

CHARACTERISTIC: POPULARITY.

DESCRIPTION: TENDENCY TO BE POPULAR. THINK IN TERMS OF OTHER STUDENTS SEEKING HIM OUT AS A COMPANION OR FRIEND IN ADDITION TO THE NUMBER OF FRIENDS HE HAS.

IS HE SOUGHT OUT BY OTHERS AND DOES HE INTERRELATE WITH MANY STUDENTS OR DOES HE TEND TO HAVE ONLY A FEW FRIENDS, BEING REJECTED BY OTHERS?

	Items;	Adjustment Weight
____	Is accepted by most other students. Other students tend to greet him in a friendly manner and he is not generally excluded from their activities.	3
____	Has few friends. Although not openly rejected, other students do not seem to pick him as a friend. Their attitude is one of tolerance rather than acceptance.	2
____	Is outstandingly popular. Is sought as a friend by most students and is generally liked by all.	4
____	Is openly rejected and avoided by other students. Few, if any, seem to like him or tend to seek him out.	1

XVI[1]

CHARACTERISTIC: INTELLIGENCE

PLEASE BASE THIS ESTIMATE ON YOUR OWN JUDGMENT RATHER THAN ON SCHOOL RECORDS.

		Adjustment Weight
_____	Below average	1
_____	Average	2
_____	Better than average	3

XVII[2]

CHARACTERISTIC: PERSONAL ADJUSTMENT

		Adjustment Weight
_____	Good	2
_____	Poor	1

XVIII

CHARACTERISTIC: JUDGMENT

		Adjustment Weight
_____	Good	2
_____	Poor	1

---

[1] Characteristic XVI is not scored for adjustment.

[2] Characteristic XVII is not scored for adjustment.

APPENDIX D

DEVELOPMENT OF TEACHERS' BEHAVIOR RATING SCALE[1]

The development of this instrument was prompted by the need for an outside objective measure of adjustment based on the youngster's behavior in day-to-day school situations. An instrument was needed that would be applicable for use with adolescents and one which would neither penalize the sighted nor the visually impaired by the nature of the content. No existing scale appeared to meet both these requirements.

Material for the construction of this scale was drawn from the Swift (1945), Haggerty-Olsen-Wickman (1930) and Schrager scales.[2] Twelve behavioral characteristics were chosen from Swift, two from Schrager, and two from Haggerty-Olsen-Wickman. Three were added by the investigators. After this selection, descriptive items were written to represent varying degrees of each characteristic. The characteristics were then submitted to judges in a two-stage process as follows: First, five high school teachers and five advanced graduate students in psychology were asked to rank the four to six options under each of 16 characteristics of behavior according to the degree of the characteristic represented by that option. For example, using the behavioral characteristic "Dependence on others," the options ranged from "demands attention continually. . . . Asks for unnecessary help" to "Rejects any attempt to give him help. . . . Completely independent, aggressively so." These options were presented in random order. . . . The extent of agreement in ranking among judges was computed using the coefficient of concordance (Siegel,[3] 1956). Concordances ranged from .43 to 1.00 and all p values were .01 or beyond. This procedure established that for each category the descriptive subitems could be discriminated from each other and tended to fall along a continuum.

---

[1] Emory L. Cowen et al., Adjustment to Visual Disability in Adolescence (New York: American Foundation for the Blind, Inc., 1961), pp. 58-60.

[2] Ibid., p. 58.

[3] Ibid., p. 59.

In order to establish a weighted numerical score for each item as a basis for computing a total adjustment score based on the full scale, the same characteristics and items were next submitted (with items randomized within characteristics) to five new advanced graduate student judges, who were asked to rank items with respect to the degree of adjustment they reflected. . . . Once again a coefficient of concordance was computed for each characteristic to determine the extent of agreement among the judges. The coefficients of concordance ranged from .69 to 1.00; all p values were .01 or beyond. Pooled judge ranking served as a basis for assigning weighted scores for the various options under each behavioral characteristic. In those cases where pooled rankings for two options were equal, the same score was given to each of them. The higher the score, the better was the level of adjustment considered to be. . . .

The scale was presented as a behavior rating instrument rather than one which measured adjustment, in order to eliminate as much bias as possible and to focus attention on concrete aspects of behavior. The teachers were asked to check the one statement of those given for each behavioral characteristic which best described the behavior of a particular student. This procedure was followed for each of the 18 characteristics presented. The one statement checked for each of the 15 behavioral characteristics (used in the computation of the adjustment score) received a weighted score as determined in the procedure outlined for the development of the instrument. The 15 scores were then added together to arrive at a total adjustment score. Whenever two teachers' ratings' were available for an individual S the results were averaged. The best possible total adjustment score was .66; the poorest possible total adjustment score was 15.5.

Regrettably, it was not possible to establish specifically the reliability of the instrument before the study got underway. Such an estimate would have demanded rating of a sizable number of Ss by the same teachers. Because of limitations in time, money, and the difficulties in obtaining the cooperation of teachers it was not feasible to do this. We were however able to compute reliabilities based on all Ss, for whom two sets of teachers' ratings were available in the present study. For 43 Ss in our E_1 group, the rater reliability was .55. The comparable figures for 36 Ss in the control group, and 56 Ss in the E_2 groups were .54 and .50 respectively. Although these reliabilities are not optimally high, they are all significant at $\underline{p}$ .01 or beyond, and suggest that there is at least modest agreement by raters in describing these behavioral characteristics.

BIBLIOGRAPHY

Allen, James H. (ed.). May's Manual of the Diseases of the Eye. Baltimore, Md.: The Williams and Wilkins Company, 1963.

Ashcroft, Samuel C. "The Blind and the Partially Seeing," Review of Educational Research, XXIX (December, 1959), 519-28.

Ashcroft, Samuel C. "Blind and Partially Seeing Children," Exceptional Children in the Schools. Edited by Lloyd M. Dunn. New York: Holt, Rinehart and Winston, Inc., 1964, pp. 413-61.

Ashcroft, Samuel C., and Harley, Randall K. "The Visually Handicapped," Review of Educational Research, XXXVI (February, 1966), pp. 75-92.

Barker, Roger G., et al. Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability. New York: Social Science Research Council, 1953.

Barraga, Natalie. Increased Visual Behavior in Low Vision Children. ("Research Series," No. 13.) New York: American Foundation for the Blind, 1964.

Bateman, Barbara D. Reading and Psycholinguistic Processes of Partially Seeing Children. ("CEC Research Monographs," Series A, No. 5.) Washington: The Council for Exceptional Children, NEA, 1963.

Berens, Conrad, and Zuckerman, Joshua. Diagnostic Examination of the Eye. Philadelphia: J. B. Lippincott Co., 1946.

Bernreuter, Robert. The Personality Inventory. Stanford, Calif.: Stanford University Press, 1935.

Bruner, Jerome S. "The Cognitive Consequences of Early Sensory Deprivation," Sensory Deprivation. Edited by Philip Solomon et al. Cambridge, Mass.: Harvard University Press, 1961, pp. 195-207.

Cowen, Emory L., et al. Adjustment to Visual Disability in Adolescence. New York: American Foundation for the Blind, 1961.

Dixon, Wilfrid J., and Massey, Frank J., Jr. Introduction to Statistical Analysis. New York: McGraw-Hill Book Company, 1957.

Edwards, Allen L. Statistical Methods for the Behavioral Sciences. New York: Holt, Rinehart and Winston, 1961.

Gibbons, Helen. "Mental Health for Children with Vision Disability," Sight-Saving Review, XXX (Winter, 1960), 219-22.

Hathaway, Winifred. Education and Health of the Partially Seeing Child. New York: Columbia University Press, 1954.

Hebb, D. O. "Cognitive and Psychological Effects of Perceptual Isolation," Sensory Deprivation. Edited by Philip Solomon et al. Cambridge, Mass.: Harvard University Press, 1961, pp. 6-33.

Hurlin, Ralph G. "Revision of the Standard Classification of the Causes of Blindness," Sight-Saving Review, XXX (Fall, 1960), pp. 153-56.

Jones, John W. The Visually Handicapped Child at Home and School. Washington: U.S. Government Printing Office, 1963.

Jones, John W., and Collins, Anne P. Educational Programs for Visually Handicapped Children. Washington: U.S. Government Printing Office, 1966.

Kerby, C. Edith. "A Report on Visual Handicaps of Partially Seeing Children," Exceptional Children, XVIII (February, 1952), 137-42.

Kirk, Edith Cohoe. "Changes and Trends in the Characteristics of Children in Classes for the Visually Handicapped, Detroit Public Schools, 1948-1963." Unpublished Ed.D. dissertation, Department of Special Education, Wayne State University, 1965.

Kirk, Edith Cohoe. "The Detroit Program for Partially Seeing Children," Sight-Saving Review, XXXV (Winter, 1965), 220-24.

Livingston, Jerome S., Justman, Joseph, and Gilbert, Harry B. Studies of Children with Physical Handicaps: III. Sixth Grade Children with Visual Handicaps Enrolled in Sight Conservation Classes. New York: Bureaus of Child Guidance and Educational Research, Board of Education of the City of New York, 1955.

Lowenfeld, Berthold. "The Visually Handicapped," Review of Educational Research, XXXIII (February, 1963), 38-42.

Mackie, Romaine P., Williams, Harold M., and Hunter, Patricia P. Statistics of Special Education for Exceptional Children and Youth, 1957-58. U.S. Office of Education Bulletin No. OE-35048-58. Washington: U.S. Government Printing Office, 1963.

Morgan, D. H. "Emotional Adjustment of Visually Handicapped Adolescents," Journal of Educational Psychology, XXXV (February, 1944), 65-81.

Mull, Helen K. "Myopia and Introversion," American Journal of Psychology, LXI (October, 1948), 575-76.

National Society for the Prevention of Blindness, Advisory Committee on Education of Partially Seeing Children. "Helping the Partially Seeing Child in the Regular Classroom," Sight-Saving Review, XXIII (Summer, 1953), 95-99.

National Society for the Prevention of Blindness. "Social and Emotional Adjustment of School Children with Eye Handicaps, A Multi-discipline Approach," Sight-Saving Review, XXVI (Fall, 1956), 156-62.

National Society for the Prevention of Blindness. Eye Report for Children with Visual Problems, Blind and Partially Seeing. New York: National Society for the Prevention of Blindness, 1965.

Pintner, Rudolf. "Intelligence Testing of Partially Seeing Children," Journal of Educational Psychology, XXXIII (April, 1942), 265-72.

Pintner, Rudolf, and Forlano, G. "Personality Tests of Partially Seeing Children," Journal of Applied Psychology, XXVII (June, 1943), 283-87.

Ruff, George E., Levy, Edwin Z., and Thaler, Victor H. "Factors Influencing Reactions to Reduced Sensory Input," Sensory Deprivation. Edited by Philip Solomon et al. Cambridge, Mass.: Harvard University Press, 1961, pp. 72-90.

Schlaegel, T. F., Jr. Psychosomatic Ophthalmology. Baltimore, Md.: The Williams and Wilkins Co., 1957.

Van Dalen, Deobold B. Understanding Educational Research, An Introduction. New York: McGraw-Hill Book Company, 1962.

Wallace, Helen M. "School Services for Partially Seeing and Blind Children in Urban Areas," Sight-Saving Review, XXIX (Fall, 1959), 160-65.

Young, Marjorie A. C. "The Partially Seeing--Psychological Aspects," Psychological Aspects of Physical Disability. Rehabilitation Service Series, No. 210. Washington: U.S. Government Printing Office, 1952.

AUTOBIOGRAPHICAL STATEMENT

Name: Ralph Louis Peabody.

Birth: Born January 30, 1928, youngest of three sons of Mr. and Mrs. Ford Peabody, Birmingham, Michigan.

Academic background: Elementary and secondary education completed in Public Schools of Birmingham, Michigan. Awarded the Bachelor of Arts degree by Michigan State University, 1954, and the Master of Education degree by Wayne State University, 1959.

Occupational and professional experience:

1948-1950, 1952-1953--Lockheed Aircraft Corporation, Burbank, California.

1950-1952 U.S. Army, overseas duty in Tokyo, Japan.

1955-1963 Board of Education, River Rouge, Michigan. Positions held: Pre-school teacher for blind children; resource room teacher for blind children; teacher consultant for the physically handicapped, in cooperation with the Wayne County Board of Education; director of program for education of blind children.

1959-1960 Summers only: Faculty of Department of Special Education, State University, Normal, Illinois.

1963 Part-time faculty, Wayne State University, Department of Special Education and Vocational Rehabilitation.

1963-present--Coordinator, Education of the Visually Handicapped Program in Special Education and Rehabilitation, University of Pittsburgh, Pittsburgh, Pennsylvania.

Honors: Phi Delta Kappa.

Professional affiliations or offices:

Council for Exceptional Children, Chapter 198: president, two years; executive board member, three years.

Michigan Federated Chapters of Council for Exceptional Children: member-at-large, three years; executive board member, three years.

American Association for Instructors of the Blind: member of various committees and workshops.

National Education Association.

Association for Supervision and Curriculum Development.

Michigan Education Association: past member.

Pennsylvania State Education Association.

Elementary-Kindergarten-Nursery Association: Pennsylvania state contact member.

Additional professional activities:

Consultant to Bureau of Research, U.S. Office of Education, 1965-present.

Curriculum consultant to Greater Pittsburgh Guild for the Blind, 1964-present.

Consultant to Division for Education of Crippled Children and Youth, U.S. Office of Education, 1966-present.

Consultant to American Institutes of Research, 1966.

Publications:

Peabody, Ralph L. "Basic Orientation and Mobility Skills for Young Blind Children," Selected Convention Papers, 40th Annual CEC Convention. Washington: Council for Exceptional Children, National Education Association, 1962.

Contributed to:

Gruber, Kathern F., and Moor, Pauline M. No Place to Go. New York: American Foundation for the Blind, 1963.

Joint author:

Birch, Jack W., et al. School Achievement and Effect of Type Size on Reading in Visually Handicapped Children. Report of the Cooperative Research Project No. 1766, Office of Education, U.S. Department of Health, Education, and Welfare and University of Pittsburgh. Pittsburgh, Pennsylvania, 1966.

Field reader:

Jones, John Walker, and Collins, Anne P. Educational Programs for Visually Handicapped Children. Washington: U.S. Department of Health, Education, and Welfare, 1966.

68

2104